

AN INVESTIGATION INTO THE RELATIONSHIP
BETWEEN ANXIETY AND NORMAL AND PATHOLOGICAL
DISSOCIATIVE EXPERIENCES

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By
Jacqueline K. J. Harris

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For Hamish, who began it all

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ABSTRACT

Dissociation may be broadly described as a subjective experience in which information from the individual's internal or external environment is not appropriately integrated into conscious awareness, memory or identity. A number of studies have found an association between dissociative experience and anxious arousal, and in particular, between dissociation and trauma. Recent reviews suggest the existence of an unspecified mediating variable that accounts for these associations. The present study compared dissociative experiences reported by a community sample ($N = 74$) and a sample of individuals with a range of anxiety disorders ($N = 20$). The potential influence of anxiety sensitivity was a particular focus. Participants completed a battery of measures assessing dissociative experience, anxious arousal, social anxiety, generalised anxiety, panic and agoraphobia, traumatic experience and posttraumatic stress in addition to measures of anxiety sensitivity and substance use. Participants in the anxiety group reported a greater variety and frequency of dissociative experiences, particularly of experiences considered to be pathological in nature. Elevated dissociation scores were associated with somatic symptoms of anxiety, social anxiety, generalised anxiety, agoraphobia and posttraumatic stress. No association between trauma *exposure* and dissociation was evident; however, trauma *intensity* was associated with dissociation in the anxiety group. Symptoms of depersonalisation / derealisation and absorption were most strongly associated with increased anxiety. Anxiety Sensitivity accounted for more of the variance in dissociation scores than did measures of expressed anxiety. These results suggest that anxiety sensitivity may account for the relationship between trauma anxiety and dissociation. Therapeutic intervention directed at anxiety sensitivity, particularly fear of cognitive discontrol, may prove helpful in treating dissociative detachment.

CHAPTER ONE

INTRODUCTION

1.1 Overview

Dissociative experiences and anxiety are common in both clinical and non-clinical populations (Cox & Taylor, 1999; Kendall-Tackett, Williams, & Finkelhor, 1993; Maaranen et al., 2005; Ross, 1996; van der Kolk, Pelcovitz, Roth, Mandel, & et al., 1996). While the phenomenology of anxiety is well established, dissociation had been relatively neglected up until the past two decades. Since then, dissociative research has substantially increased (Ross, 1996). The current trend of research on dissociation is reminiscent of the prominence dissociative phenomena enjoyed in psychology more than a century ago (Ray, 1996). This development is likely a function of the relatively recent availability of self-report measures of the construct, such as the Dissociative Experiences Scale (DES: Bernstein & Putnam, 1986), increased interest in traumatic stress syndromes, and the centrality of dissociation in recent diagnostic additions to the Diagnostic and Statistical Manual of Mental Disorders such as Posttraumatic Stress Disorder and Acute Stress Disorder (DSM-III: American Psychiatric Association, 1980) (Mayer & Farmer, 2003; Putnam, 2006). Despite this resurgence in interest and the plethora of research that has emerged, many anomalies remain regarding the aetiology of dissociation, controversy over the nature of dissociation itself, and over its manifestation in normal and clinical populations. Research suggests that dissociation is intimately linked to anxiety and traumatic stress, a finding that accords with anecdotal reports from clinical practice of elevated dissociation in anxious patients, and which illustrates the blurred distinction between the anxiety and dissociative disorders. That dissociation is so poorly conceptualised and understood suggests that it may remain unrecognised and

undiagnosed in many individuals. Dissociation interferes with the therapeutic process. Therefore, such neglect may have considerable impact on treatment outcome in patients with a variety of psychological disorders of which dissociation is a core feature. Conversely, since dissociation is thought to be an avoidant coping strategy (Hayes, Wilson, Gifford, Follette, & et al., 1996), determining the level at which dissociation becomes unhelpful or obstructive, in what direction to focus the treatment of dissociation, and the consequences of removing this mechanism from an individual's repertoire of coping strategies, requires consideration.

The domain of dissociation, and in particular its relationship to anxiety, requires systematic exploration. The present research contributes to this exploration with simultaneous examination of different aspects of anxiety symptomatology in relation to both normal and pathological forms of dissociation. Because the domain of dissociation is so poorly conceptualised, the following literature review describes the various approaches to its definition and understanding. This is followed by a brief overview of the relationship between trauma and dissociation, and a review of the studies linking various forms of anxiety with dissociation. Finally, the present study is described.

1.2 Dissociation

Historically, the realm of dissociation has been subject to considerable controversy that largely stems from conceptual confusion. The term 'dissociation' has been used in a number of disciplines to describe diverse processes, both normal and pathological. No one distinct referent or conceptualisation of dissociation has emerged (Cardena, 1994). Not surprisingly then, the literature on dissociation has become expansive and disparate.

Broadly, uses of the term dissociation may be categorised into one of three domains: (1) multiple mental processes that are not associated with one another, or are unintegrated among themselves and are not consciously accessible; (2) psychological disengagement from oneself

or the environment; or (3) as a defence mechanism [viz: a mechanism by which emotional distress is warded off, see explanation below] (Cardena, 1994).

The first subdivision is commonly used in cognitive psychology and refers to phenomenon such as *perception without awareness* and *automatic behaviours*. Essentially, this characterisation of dissociation is indistinguishable from terms such as ‘subconscious’ or ‘subliminal’. However, this subdivision also encompasses the coexistence of separate cognitive units or systems that should be integrated in an individual’s stream of consciousness or memory (e.g., state dependent learning, dissociative identity disorder (DID), and dissociative amnesia). Inconsistency between an individual’s behaviour or perception, and their reports of their internal experience may also be included in this domain (Cardena, 1994; Holmes et al., 2005).

The second subdivision, *psychological disengagement*, is commonly encountered in clinical psychology and refers to alterations in consciousness where individuals are not fully engaged with their environment, their internal experiences or their actions (e.g., depersonalisation and derealisation, absorption) (Cardena, 1994).

The third subdivision, a *defence mechanism*, is a theoretical construct in which the individual intentionally denies themselves conscious access to information that would cause them anxiety or emotional discomfort. When confronted with an immediate threat, the dissociative mechanism is initiated, which safeguards the individual’s psychological integrity (Cardena, 1994). This conceptualisation of dissociation has also been used to explain the occurrence of phenomena such as dissociative identity. The defence mechanism is thought to be functional though not necessarily conscious, or under volitional control. It may be initiated in isolated instances (e.g., in response to trauma) or continuously and characterologically (e.g., dissociative identity disorder) (Cardena, 1994).

1.2.1 Conceptualising Dissociation

Contemporary definitions of dissociation are descriptive and emphasise that information is not appropriately integrated into conscious experience, memory or identity (Bernstein & Putnam, 1986). For example, the American Psychiatric Association (APA) defines dissociation as “a disruption of the usually integrated functions of consciousness, memory, or identity, or perception of the environment” (Diagnostic and Statistical Manual of Mental Disorders, DSM-IV-TR, American Psychiatric Association, 2000). This conceptualisation effectively incorporates Cardena’s first two subdivisions of dissociation (as described above). Dissociation, in this view, interferes with the associative integration of information.

The DSM-IV-TR asserts, however, that dissociation is not inherently pathological. Some forms of dissociation may be viewed as part of ‘normal’ experience (American Psychiatric Association, 2000). Consistent with this view, dissociation may be conceptualised as dimensional or as a continuum of experience ranging from normal and benign (e.g., absorption) to more pathological dissociative states (e.g., depersonalisation / derealisation) to severe and chronic manifestations (e.g., dissociative identity disorder). All dissociative phenomena are qualitatively similar but varying in the degree or intensity of their experience (Holmes et al., 2005). In line with this point, research over the past decade has established that transient dissociative experiences are reported by the large majority of individuals in both clinical and nonclinical populations, from various cultures (Bernstein & Putnam, 1986; Kirmayer, 1994; Maaranen et al., 2005; Ross, Joshi, & Currie, 1990; van Ijzendoorn & Schuengel, 1996).

In contrast, a distinct pathological dissociative taxon has been proposed (Waller, Putnam, & Carlson, 1996; Waller & Ross, 1997). The term *taxon* may be defined as a “type” or “natural category” and is not an arbitrary class or a dichotomisation of a continuous variable

(Waller et al., 1996). By this view, a qualitatively distinct collection of symptoms (unrelated to everyday dissociative experiences) indicate dissociative psychopathology. This taxon challenges the notion of the dissociative continuum. The dissociative taxon was first suggested by Waller, Putnam and Carlson (1996) in a large mixed sample including patients with DID ($n = 228$) and normal controls ($n = 228$). Taxometric analyses of responses to the Dissociative Experiences Scale (DES) revealed that eight items of the DES reflect (what the authors view as) pathological manifestations of dissociation that seem to be markers of an underlying taxon. Waller et al. summed these items (now called the DES-T) to assess for the presence of a taxon in both clinical and nonclinical samples of adults. These results were replicated and extended by Waller and Ross (1997) in two North American samples of adults from the general population. That analysis indicated some 3.3% of the North American population belong to the taxon class. The DES-T has now been used in a number of studies (Maaranen et al., 2005; Watson, 2003).

Although the controversy surrounding the dimensional / categorical debate has not been resolved, recent research disputes the validity of the taxon described by Waller and colleagues. With a large sample of undergraduate students, Watson (2003) examined the 2-month stability of the taxon, along with other measures of dissociation. Taxon scores were not found to be particularly stable. Indeed taxon scores were less stable than continuous measures of dissociation. Further, the majority of individuals who were classified as taxon members at the first assessment were classified as nonmembers at the second assessment (Watson, 2003). These results strongly challenge the construct validity of the dissociative taxon proposed by Waller and colleagues.

More recently, Holmes and colleagues (Holmes et al., 2005) reconceptualised dissociation as two qualitatively distinct phenomena labelled ‘detachment’ and ‘compartmentalisation’.

Detachment may be described as dissociative-process symptoms, paralleling Cardena's second subdivision. The individual experiences "an altered state of consciousness characterised by a sense of separation (or 'detachment') from certain aspects of everyday experiences" (Holmes et al., 2005, p. 5). These alterations may include detachment from oneself or one's environment. Out-of-body experiences, depersonalisation and derealisation may all be incorporated in this category. States of detachment may be acute and temporary, or chronic. Therefore, Holmes et al. conceptualise detachment phenomena as continuous and dimensional, defined by severity, chronicity and functional impairment.

Compartmentalisation parallels Cardena's first subdivision of dissociation. The essential feature of compartmentalisation is "a deficit in the ability to deliberately control processes or actions that would normally be amenable to such control" (Holmes et al., 2005, p. 7). These processes and the information associated with them are compartmentalised. Aside from their inaccessibility, these processes continue to function normally. This preservation of normal function fundamentally differentiates compartmentalisation from detachment. Dissociative amnesia and the DSM-defined conversion disorders are incorporated within compartmentalisation, as are hypnotically-induced 'normal' dissociative experiences. Holmes et al. state that DID and dissociative fugue could also be included here, subject to the development of their nosological status. Compartmentalisation phenomena are also continuous and dimensional (Holmes et al., 2005).

In the present study, dissociation is conceptualised as a dimensional construct that involves an alteration in experience relating to psychological disconnection or disengagement from oneself or one's environment but with intact reality testing. Severity is indexed by both the number of symptoms present, and the frequency with which they occur.

1.3 The Dissociative Spectrum

Because the present study examines various forms of dissociation, these are described below with some attention to specific symptoms and experiences.

As alluded to above, dissociative disconnection may occur in a number of ways. Contemporary research suggests that absorption, depersonalisation / derealisation and amnesia are core features of dissociation (Kihlstrom, Glisky, & Angiulo, 1994; Ray, June, Turaj, & Lundy, 1992; Ross, 1996). These occur with varying degrees of frequency and intensity in both general and clinical populations (Ross et al., 1990). Such dissociative alterations are not under conscious control, but occur automatically and reflexively (Allen, Console, & Lewis, 1999; Cardena, 1994). Moreover, these experiences can be distressing to the extent that the individual feels out of control and alienated (Allen et al., 1999).

1.3.1 Absorption

Absorption may be described as an episode during which one's whole attention is fully engaged. This results in "a heightened sense of the reality of the attentional object, imperviousness to distracting events, and an altered sense of reality in general, including an empathically altered sense of self" (Tellegen & Atkinson, 1974). Experiences of absorption are commonly described in the general population and are, by and large, considered mild or nonpathological in nature (Roche & McConkey, 1990). These include fantasising or daydreaming, becoming so engaged in a television program (or similar) that one becomes unaware of surrounding events, and lack of awareness of the passage of time.

The construct of absorption is likely related to the concept of "flow" described by Csikszentmihalyi in the literature on positive psychology (Nakamura & Csikszentmihalyi, 2002). Flow is a rewarding experience in which individuals are fully engaged in the present

moment. In this subjective state, individuals are fully involved in an activity to the point where they are unaware of the passage of time, of bodily sensations or of their environment, and are functioning at their fullest capacity (Nakamura & Csikszentmihalyi, 2002). Absorption also overlaps considerably with imaginative involvement or fantasy proneness, and openness to experience (Roche & McConkey, 1990) and as such, has been a point of some contention. However, absorption experiences are included in all commonly used measures of dissociation, therefore, the relationship between absorption and fantasy proneness may be an artefact of item overlap (Kihlstrom et al., 1994).

1.3.2 Depersonalisation and Derealisation

Depersonalisation refers to a subjective sense of detachment from oneself. This detachment can refer to either one's mental processes or one's body (American Psychiatric Association, 2000). Experiences of depersonalisation that have been described include (but are not limited to) feeling as if one is outside of one's own body ('out-of-body' experience); feeling like an 'automaton'; a sense that one's behaviours and emotions are not under one's control; and a sense that parts of one's body are disconnected, unreal or foreign (American Psychiatric Association, 2000; Baker et al., 2003; Coons, 1996; Lambert, Senior, Fewtrell, Phillips, & David, 2001; Steinberg, 1993). Depersonalisation is often accompanied by *derealisation*, in which the individual experiences their surroundings as not quite real, or feel that they inhabit a dreamlike world. Individuals described this as feeling "spaced out" or "foggy". While often co-occurring, these phenomena are distinct from one another (Baker et al., 2003). Marijuana and other hallucinogens and also states of meditation are known to create altered states of consciousness similar to depersonalisation / derealisation (Kirmayer, 1994; Medford et al., 2003).

1.3.3 Amnesia

Dissociative amnesia can refer to either *segment amnesia*, in which the individual is unable to remember some aspect or event of their life, or *in situ amnesia*, in which the individual suddenly awakes or “comes to” in their current situation with little or no recall of preceding events (Kihlstrom et al., 1994). Dissociative amnesia is thought to arise from one of two processes reflecting either a retrieval failure or an encoding failure (Allen et al., 1999). Amnesia for events that occurred while an individual was detached may reflect a deficit in encoding, while amnesia due to compartmentalisation may be accounted for by a retrieval deficit (Allen et al., 1999).

Other features proposed to be part of the dissociative spectrum (but for which there is less consensus) include (1) identity confusion and alteration (e.g., Dissociative Fugue, Dissociative Identity Disorder) (2) emotional numbing and (3) intrusive images and flashbacks (as in posttraumatic stress) (Kluft, 1996; Merckelbach & Muris, 2001). These features are not addressed in the present study.

Absorption, derealisation, depersonalisation and amnesia are variously referred to in the literature as discrete singular experiences, as symptoms of various psychological disorders (e.g., depersonalisation / derealisation in Posttraumatic Stress Disorder, Panic Disorder and others) and as disorders in and of themselves (e.g., Depersonalisation Disorder). The DSM (American Psychiatric Association, 2000) category of Dissociative Disorders includes Dissociative Amnesia, Dissociative Fugue, Depersonalisation Disorder, and DID¹. In these disorders, the dissociative features described above are experienced as pervasive and

¹ This discussion of the dissociative disorders necessarily excludes the conversion disorders (subsumed within the broader Somatoform disorders category in the DSM-IV). The conversion disorders, along with the dissociative disorders, constitute what has historically been understood as ‘hysteria’. The other major diagnostic system (ICD-10: World Health Organization, 1992) does not make this distinction, but rather, incorporates all disorders that arise from pathological dissociation, in the one category of Dissociative Disorders.

prolonged (although no definitions of ‘pervasive’ or ‘prolonged’ are given in the manual). Consequently, the individual experiences impairment in their social, occupational and interpersonal functioning, and may experience considerable distress as a result of these experiences (American Psychiatric Association, 2000).

1.4 Measurement of Dissociation

Before going on to discuss the epidemiology of dissociation, it is necessary to discuss its measurement in order to clarify what exactly has been uncovered. The operationalisation and quantification of dissociative experiences has been largely based on the continuum model of dissociation. Screening measures and interviews developed over the preceding two decades assess an individual’s standing on one or more dissociative dimensions (as detailed above).

The DES is the most widely used instrument and is the original comprehensive measure of dissociation. The scale was developed by Bernstein and Putnam in the early 1980’s (Bernstein & Putnam, 1986). This questionnaire is designed to screen for dissociative experiences and symptoms, focussing on amnesia, identity alteration, depersonalisation / derealisation, and absorption. Two official versions exist (the DES and DES-II) although a host of unauthorised forms with various response formats are also in circulation. Three factors are consistently derived from factor-analytic studies of these scales, which parallel amnesia, depersonalisation / derealisation and absorption (Carlson & Putnam, 1993; Ray & Faith, 1995; Ray et al., 1992; Sanders & Green, 1994; Stockdale, Gridley, Balogh, & Holtgraves, 2002). Although the scale was originally based on the continuum model, the authors have since statistically derived a measure of the proposed pathological dissociative taxon, which is drawn from responses to eight items of the DES (the DES-T subscale, see above). These taxon items relate to experiences of dissociative amnesia and depersonalisation / derealisation. Recently, the DES has been criticised on a number of levels. Firstly, the scale does not

necessarily reflect the severity of dissociative experiences: responses assess the number of dissociative experiences one has had rather than the severity of a single item. For example, the respondent may endorse one or two debilitating items (e.g., chronic depersonalisation) but will still score within the normal range (Holmes et al., 2005). Secondly, the range of questionnaire items is limited, excluding more “normal” or non-interfering symptoms of dissociation, and conversion symptoms (Holmes et al., 1995; Mayer & Farmer, 2003). Lastly, the response format of the DES is difficult (Goldberg, 1999).

Numerous similar scales followed the development of the DES (often variations of the DES itself), including measures of peritraumatic dissociation that assess dissociative experiences at the time of a traumatic event (e.g., the Peritraumatic Dissociative Experiences Questionnaire, PDEQ: Marmar, Weiss, Schlenger, Fairbank, & et al., 1994). Dissociative scales for children and adolescents have also emerged (e.g., the Adolescent Dissociative Experiences Scale, A-DES: Armstrong, Putnam, Carlson, Libero, & Smith, 1997).

In addition to questionnaire measures of dissociative experiences, two structured diagnostic interviews have been developed. The Structured Clinical Interview for DSM-IV Dissociative Disorders – Revised (SCID-D-R) and the Dissociative Disorders Interview Schedule (DDIS) are based on DSM criteria for dissociative disorders. The SCID-D-R (Steinberg, 1994) is a semi-structured, clinician-administered interview that assesses for the presence of dissociative amnesias, identity confusion/alteration, and depersonalisation/derealisation. Where appropriate, the interview renders a diagnosis for the five dissociative disorders and for Acute Stress Disorder. The DDIS (Ross, Heber, Norton, Anderson, & et al., 1989), in addition to its function as a diagnostic instrument, may be used as a screening measure. This schedule also inquires about history of child abuse, major depression, somatic complaints, substance abuse and paranormal experiences.

More recently, Experience Sampling Methodology (ESM) has also been used to screen for dissociative experiences (Mayer & Farmer, 2003). This assessment method is relatively new and is used for sampling individuals' personal experiences (e.g., thoughts, emotions, sensations) in naturalistic settings. The activation of a device such as an electronic pager, signals participants to record experiences s/he was having immediately prior to the prompt. This method has been suggested to be less influenced by biases commonly associated with retrospective reporting on questionnaires and has been demonstrated to be a reliable and valid indicator of numerous psychological constructs (Csikszentmihalyi & Larson, 1987).

While much work remains to be done in the development of appropriate assessment measures, our understanding of dissociative experiences and disorders has flourished as a result of these scales and instruments, and the proliferation of research that has stemmed from them.

1.5 Epidemiology of Dissociation

The prevalence and nature of dissociative experiences have been examined in both clinical and non-clinical populations. These studies have most commonly use the DES (Bernstein & Putnam, 1986) or some variation of that scale as described above.

In the development of the DES, Bernstein and Putnam (1986) administered the scale to a sample of 31 young adult college students (age 18 – 22 years), 34 normal adults, 14 adults with substance use disorders, 63 patients with anxiety disorders, 20 patients with schizophrenia and 20 patients with dissociative identity disorder (at that time called multiple personality disorder). Normal adults scored lowest on the scale, with a median score of 4.38 out of a possible 100, showing some small degree of dissociation. However, the subsample of college students scored significantly higher than the subsample of older adults with a mean of

14.11. Scores for the remaining samples increased incrementally, consistent with diagnostic expectation.

1.5.1 Dissociation in the General Population

Some form of dissociative experience is common to individuals in the general population, including experiences that may be viewed as pathological (Maaranen et al., 2005; Ray & Faith, 1995; Ray et al., 1992; Ross et al., 1990; Waller & Ross, 1997).

The first large scale study of dissociation in the general population was conducted by Ross, Joshi and Currie (1990) in Winnipeg, Canada. The DES was administered to a stratified random sample of 1055 adults (age 18+ years). The final sample included 41.7% males, 58.3% females in accordance with recent census data. A mean score of 10.8 ($SD = 10.2$) was found. Some 5% of the sample scored above 30², 8.4% above 25, and 12.8% above 20 on the DES. This suggests that people in the general population report significant levels of symptoms that are consistent with dissociation. Overall, the findings of that study showed that (a) dissociative experiences are independent of gender, income, employment status, education, and religious affiliation, (b) decline with age ($r = -0.23$), and (c) may be at levels judged pathological even amongst the general population. A meta-analysis of studies using the DES reported similar data, with a mean adult score of 11.57 ($SD = 10.63$) (van Ijzendoorn & Schuengel, 1996).

Later research by Ryan and Ross (Ryan, 1988; Ross, 1988; described in Ray, 1996) also indicated that levels of dissociation decline between early adolescence and college age. This suggests that some maturational developmental process may occur with dissociative experiences (Ray, 1996), however, no similar data has been gathered with clinical populations.

² In clinical studies, scores of 30 or above are indicative of dissociative pathology (e.g., dissociative disorder, posttraumatic stress disorder). Scores above 20 are indicative of a substantial number of dissociative experiences (Ross et al., 1990)

In studies limited to college-age student populations, Ray and colleagues (Ray & Faith, 1995; Ray et al., 1992) examined the nature and frequency of dissociation using both the DES and the Questionnaire of Experiences of Dissociation (QED: Riley, 1988). College-age students also reported a variety of dissociative experiences, but direct comparisons of scores can not be made since the Ray studies utilised a different response set for the DES, to those of the Ross studies. Van Ijzendoorn and Schuegel (1996) reported an average college-age student score of 14.27 ($SD = 11.54$) in their meta-analysis of DES studies. Similarly, Gleaves and colleagues (2000) reported a mean of 15.72 ($SD = 12.95$) (Gleaves, Williams, Harrison, & Cororve, 2000). Overall, these experiences do not appear to disrupt the individual's general functioning (Ray, 1996) and as such may not be considered pathological in nature.

As with adults from the Winnipeg study, the students tended to more frequently endorse items reflecting absorption and to some extent, derealisation (Ray, 1996; Ray & Faith, 1995; Ray et al., 1992; Ross et al., 1990). These results suggest that, at least to some extent, dissociation is a normal cognitive process (Ray, 1996). However, later research by Waller and Ross (1997) revealed that approximately 3.3% of the general population evidence pathological dissociation. In that study, adults from a community sample endorsed items such as "hearing voices inside one's head" "find new things among belongings but do not remember buying" "do not recognise friends or family members". The authors categorised those respondents as belonging to the proposed dissociative taxon (Waller et al., 1996; Waller & Ross, 1997). This pattern appears to be consistent across cultures. More recent research by Maaranen and colleagues (2005) found similar patterns in a sample of 2001 participants from the general population of Finland. The prevalence of pathological dissociation as measured by the DES-T was 3.4% and did not differ between genders. However, in general, men scored higher in the amnesia scale, and women on the absorption scale. DES-T scores were highly correlated with alexithymia, depression and suicidality, and with frequent alcohol

consumption (Maaranen et al., 2005). Overall, it appears that the dissociative disorders as a group have a lifetime prevalence of 3 – 11% in the general population, although these are not diagnoses made in a clinical setting but are the result of self-report data and results of structured clinical interviews in research settings (Ross, 1999).

1.5.2 Dissociation in Clinical Populations

Research has consistently found elevated mean dissociation scores in psychiatric patients with varying diagnoses (Cardena & Spiegel, 1996; Putnam, Carlson, Ross, Anderson, & et al., 1996; Saxe, Van der Kolk, Berkowitz, Chinman, & et al., 1993). Dissociation is a key feature of several diagnostic groups aside from the dissociative disorders, including posttraumatic stress disorder and personality disorders (Carlson & Putnam, 1993; Coons, 1996; Putnam et al., 1996; Simeon et al., 1997). High levels of dissociation, and even co-morbid dissociative disorders, are also features of eating disorders (Brown, Russell, Thornton, & Dunn, 1999; Demitrack, Putnam, Brewerton, Brandt, & et al., 1990), substance abuse (Langeland, Draijer, & van den Brink, 2002; Medford et al., 2003), psychoses (Coons, 1996), anxiety (Cassano, Petracca, Perugi, Toni, & et al., 1989; Coons, 1994; Coons, Bowman, Pellow, & Schneider, 1989; Gershuny & Thayer, 1999; Grabe et al., 1999) and mood disorders (Lambert et al., 2001; Sedman & Reed, 1963). However, these relationships are likely more complex than initially thought. For example, Gleaves and Eberenz (1995) found, in a clinical sample of individuals with eating disorders, that elevated levels of dissociation could be accounted for by anxiety and depression co-morbid with the eating disorder (Gleaves & Eberenz, 1995).

With the exception of samples of individuals diagnosed with dissociative disorders (e.g., Simeon et al., 1997; Simeon, Knutelska, Nelson, & Guralnik, 2003), the exact nature of the dissociative symptoms experienced by clinical populations has not been detailed. It seems that, in general, elevated scores found in psychiatric groups are accounted for by more

frequent and more severe incidents of dissociative experiences found in the general population (e.g., Putnam et al., 1996).

Prevalence data of individuals diagnosed with dissociative disorders is not given in the DSM-IV or elsewhere. However, data from North America suggest that undiagnosed DID affects approximately 5% of the general adult inpatient population, while some 20% of inpatients have some other form of dissociative disorder (Ross, 1999). In adulthood, DID is diagnosed three to nine times more frequently in females than in males, while depersonalisation disorder is diagnosed at least twice as often in females than in males (American Psychiatric Association, 2000). Dissociative disorders are common, particularly for women, but are nonetheless rarely diagnosed or treated.

1.5.2.1 Developmental Considerations

No study has, as yet, directly compared children adolescents and adults, and therefore, the maturational process associated with dissociation is not clearly delineated. Studies of children with dissociative disorders suggest that, at least in clinical samples, the core phenomenology of dissociative disorders in childhood and adolescence appears to be similar to adult dissociative symptoms, although the everyday manifestations of dissociation vary (Hornstein, 1996; Putnam, 2006). Younger children in clinical samples are less overtly symptomatic than older children. Trance-like or spaced-out states appear common throughout development while amnesias and identity disturbances are more evident with increasing age. No gender difference in dissociative disorders is apparent in childhood, however, from adolescence to adulthood an increasing ratio of female to male dissociative diagnoses is evident (Hornstein, 1996; Putnam, 2006).

1.5.2.2 Culture and Religious Considerations

When considering dissociation in both clinical and nonclinical samples, culture and religious affiliation require consideration because, in many societies, apparently pathological dissociative states are common and culturally accepted activities or religious experiences (Kirmayer, 1994). Current classificatory systems have not been found suitable when applied across cultures (Isaac & Chand, 2006). DSM-IV identifies several dissociative syndromes that are in some instances indigenously accepted as pathological and cause distress and impairment (e.g., dissociative trance states). These may be differentiated from culturally accepted dissociative states by the involuntary onset or maintenance of the state (*e.g., ataque de nervois* in Latin America; American Psychiatric Association, 2000).

1.6 Aetiology of Dissociation: The Role of Trauma

A recurrent theme in the literature on dissociation is that traumatic experiences are aetiologically linked to dissociative symptomatology. For example, Putnam and colleagues (1996, p.673) claim that “numerous clinical studies have established that elevated levels of dissociation are significantly associated with histories of antecedent trauma” (Putnam et al., 1996). Experiences of dissociation following traumatic events are viewed as initially normal adaptive responses, which compartmentalise the experience, and reduce its psychological impact. Chronic reliance on dissociation as a coping strategy, however, is thought to contribute to the development of psychopathology (Foa & Hearst-Ikeda, 1996).

This idea is not new. Systematic investigation of dissociation by Pierre Janet and others in the 19th century resulted in similar conclusions (Van der Kolk & Van der Hart, 1989). Janet documented thousands of clinical case studies, attributing what was then described as hysteria, to overwhelming stress and trauma. In contrast to the psychoanalytic notion of the defence mechanism as purposeful and functional, Janet viewed dissociative reactions as

failures of attention and information processing when an individual is overwhelmed by “vehement” emotions (e.g., terror) (Van der Hart & Friedman, 1989; Van der Kolk & Van der Hart, 1989). Janet proposed that dissociation results in the development of new spheres of consciousness around memories of highly arousing experiences that are not integrated in the individual’s identity and long-term memory. These spheres he called “subconscious fixed ideas”. The precipitating event itself is not necessarily dramatic, but may include relatively benign situations such as financial or marital problems: the intensity of the emotion rather than the event itself, precipitates dissociation. Dissociation, Janet argued, remains a way of coping with any subsequent stress (Putnam, 2006; van der Kolk, 1996; Van der Kolk & Van der Hart, 1989).

The First World War interrupted Janet’s writing on dissociation and his work was largely ignored in the years following, as psychoanalytic perspectives took precedence. Resurgence of interest in the phenomenon of dissociation occurred in conjunction with the large numbers of Vietnam veterans with posttraumatic stress syndromes and the publication of DSM-III in 1980 that included distinct categories of dissociative disorders (Putnam, 2006; van der Kolk, 1996; Van der Kolk & Van der Hart, 1989). The plethora of research that has resulted from this renewed interest has underscored the role of individual response to trauma in the aetiology of dissociative experiences and the development of dissociative disorders (Putnam, 1997, 2006).

The evidence linking trauma and dissociation is threefold. Firstly, patients with dissociative and related disorders (e.g., PTSD) report high levels of trauma. Second, there appears to be a dose-effect relationship between trauma exposure and dissociation scores whereby increased exposure to trauma is positively correlated with increased scores on dissociation indices. Third, higher levels of dissociation are found in traumatised samples than in non-traumatised samples in both clinical and nonclinical groups.

Numerous studies utilising various clinical populations have reported significant correlations between self-reported traumatic events and elevated levels of dissociation, as indexed by the DES. In a meta-analytic review of the DES, van Ijzendoorn and Schuengel (1996) reported a “large and robust” effect size for studies of the relationship between Posttraumatic Stress Disorder (PTSD) and dissociation. Among a sample of inpatients diagnosed with a dissociative disorder, Saxe and colleagues (1993) found that 90% also met criteria for PTSD.

Various traumatic events have been linked with PTSD and dissociation in general. Studies reporting this link have included combat veterans (Bremner, Southwick, Brett, Fontana, & et al., 1992), holocaust survivors (Yehuda, Elkin, Binder-Brynes, Kahana, & et al., 1996), victims of motor vehicle accidents (Harvey & Bryant, 1998), victims of sexual and nonsexual assault (Dancu, Riggs, Hearst-Ikeda, & Shoyer, 1996), among others³. Perhaps the most robust link between trauma and dissociation has stemmed from the literature on child abuse, and in particular, from child sexual abuse.

Individuals who have experienced physical or sexual child abuse are at risk for the development of dissociative symptoms in adulthood (Briere & Runtz, 1988; Coons, 1994; Coons et al., 1989; DiTomasso & Routh, 1993; Goodwin & Sachs, 1996; Irwin, 1999; Kisiel & Lyons, 2001; Lewis-Fernández et al., 2002; Neumann, Houskamp, Pollock, & Briere, 1996; van der Kolk et al., 1996). From a dissociative disorders clinic in Indianapolis, Coons (1994) reported a 100% incidence rate of physical or sexual child abuse in his study of nine child and adolescent patients with dissociative identity disorder (then, multiple personality disorder) and 90% incidence of child abuse or neglect in 10 patients with dissociative disorder not otherwise specified (DDNOS).

³ For comprehensive reviews of the relationship between traumatic events and dissociation, refer to Gershuny & Thayer (1999) and to Foa and Hearst-Ikeda (1996).

However, histories of childhood abuse have been associated with a wide variety of psychopathologies (Briere, 2002; Kendall-Tackett et al., 1993). Indeed correlations between reported histories of physical or sexual abuse and scores on self-report measures of dissociation are often small to moderate (e.g., DiTomasso & Routh, 1993) indicating that abusive histories do not necessarily result in dissociative reactions. Similarly, some research suggests that childhood abuse does not invariably result in maladjustment (McNally, Clancy, Schacter, & Pitman, 2000). Moreover, DiTomasso and Ruth (1993) presented evidence that the connection between child sexual abuse and dissociation disappears when a measure of pathogenic family environment is entered as a covariate. This suggests that the relationship between childhood trauma and dissociation may be moderated by family pathology.

A recent review by Merckelbach and Muris (2001) supports the view that the relationship between trauma and dissociation is likely to be indirect, and mediated by other variables. Merckelbach and Muris evaluated the studies that had been cited as evidence for a linear relationship between traumatic events and pathological dissociation. These authors argue that the correlation is at best modest, and that the relationship is not simple and robust (Merckelbach & Muris, 2001).

1.7 Dissociation and Anxiety

In learning theory, the term anxiety is used to connote a motivational state that functions to motivate avoidance responding (Reber, 1995). The emotion associated with anxiety is fear, or fear-like (among other things). The common feature of all forms of psychological trauma, inherent in the DSM-IV-TR (American Psychiatric Association, 2000) definition of trauma, is a feeling of intense fear and / or the threat of losing / lacking control. Higher levels of post-trauma anxious arousal predict higher levels of dissociation (Foa & Riggs, 1995; Sterlini &

Bryant, 2002). As originally theorised in the concept of dissociation, one possible third variable related to dissociation, then, is anxiety (Nuller, 1982).

In a recent study, a simulated form of peritraumatic dissociation was examined in novice skydivers (N = 100) who were participating in their first skydive (Sterlini & Bryant, 2002). Prior to jumping, participants completed the Beck Anxiety Inventory (BAI), the Tellegen Absorption Scale (TAS), and ratings of unpredictability and uncontrollability. Upon completion of the jump, all completed the PDEQ and the Physical Reactions Scale (PRS), a measure of hyperarousal. Results suggested that the jump elicited extreme levels of anxiety as indexed by the BAI, hyperarousal as indexed by the PRS, and peritraumatic dissociation in a significant proportion of the skydivers. Multiple regression analyses indicated that hyperarousal, and to a lesser extent anxiety, were strongly predictive of peritraumatic dissociative reactions, together accounting for 29% of the variance. Dissociative tendency, as measured by the TAS, was not predictive of peritraumatic dissociation. The authors suggest that dissociation is mediated by hyperarousal, a common indicator of anxiety (Sterlini & Bryant, 2002). The results also suggest that dissociation is an avoidance response.

Gershuny and Thayer (1999) suggest that dissociation in response to traumatic experience could be accounted for by basic fears (e.g., fears about death, loss of control). Other aspects of anxiety have been investigated as possibly underlying or differentiating the relationship between trauma and dissociation. Patients with anxiety disorders experience higher levels of dissociation and absorption than do normal controls (Wolfradt & Meyer, 1998). A number of studies (outlined below) have demonstrated elevated levels of dissociative experiences in individuals with generalised anxiety, panic disorder, social phobia and obsessive-compulsive disorder. What then is the nature of the association between anxiety and dissociation?

1.7.1 Generalised Anxiety Disorder

Only one study has addressed any connection between generalised anxiety and dissociative experiences. In order to determine whether the link between trauma-related distress and dissociation is nonspecific, Muris, Merckelbach and Peeters (2003) examined whether dissociation was associated with a variety of anxiety symptoms. To a sample of 331 adolescents, the authors administered measures of dissociation, anxiety, and fantasy proneness. As with the adult version of the DES, the A-DES includes subscales assessing amnesia, absorption and imaginative involvement, depersonalisation/derealisation and also includes a subscale assessing passive influence. The revised version of the Screen for Child Anxiety Related Emotional Disorders (SCARED) was utilised which consists of seven subscales assessing symptoms of posttraumatic stress disorder, generalised anxiety disorder, obsessive-compulsive disorder, panic disorder, separation anxiety disorder, social phobia and specific phobia. Lastly, the Creative Experiences Questionnaire (CEQ) assessed fantasy proneness. Regression analyses indicated that A-DES scores were not only significantly related to symptoms of PTSD, but also to other anxiety disorders, including generalised anxiety, obsessive-compulsive disorder, and panic disorder. Each of these were significant, independent predictors of A-DES scores. These results indicate that, in non-clinical samples, dissociation is nonspecific to anxiety stemming from posttraumatic stress. Whether this pattern emerges in adult and clinical samples warrants further study.

1.7.2 Panic Disorder

Dissociative states of altered consciousness are preceded or accompanied by states of intense anxiety. Not surprisingly then, among patients with panic disorder, symptoms of depersonalisation and derealisation are commonly reported as characteristic of panic attacks (Cassano et al., 1989). Experiences of depersonalisation / derealisation during panic attacks

are reported by up to seventy percent of patients with panic disorder (Ball, Robinson, Shekhar, & Walsh, 1997). However, when assessed for a greater range of dissociative symptoms of dissociation, patients with panic disorder do not experience a greater range or frequency of dissociative experiences than do patients with other anxiety disorders. Ball et al., (1997) contrasted the prevalence and correlates of dissociative experiences in patients with panic disorder ($n = 29$) and patients with other anxiety disorders ($n = 27$). The authors administered the DES, along with measure of general anxiety (i.e., the State-Trait Anxiety Inventory), panic and avoidance (i.e., Anxiety Sensitivity Index, Fear Questionnaire), and social anxiety (Social Phobia and Social Interaction Scales, Fear of Negative Evaluation – Brief Version), in addition to measures of depression and personality disorder traits. Panic disorder patients reported DES scores that were similar to those of patients with other anxiety disorders. Indeed those with other anxiety disorders tended to score higher, but this difference was not significant. No comparison with individuals from the general population could be made. DES scores were, in general, related to severity of depression, social anxiety, and personality disorders (Ball et al., 1997).

1.7.3 Social Phobia

Until recently, no research had explicitly examined any possible link between social phobia and dissociation. Only one study, examining dissociative symptoms and panic disorder (described above), reported a correlation between scores on the DES and scales assessing social anxiety (Ball et al., 1997). A relationship between the two phenomena was also suggested by the results of a study with 117 patients with depersonalisation disorder (Simeon et al., 2003). In that sample, 30% met diagnostic criteria for social phobia and 23% for avoidant personality disorder (Simeon et al., 2003).

However, a recent systematic investigation conducted by Michal and colleagues (2005) revealed a strong association between symptoms of social phobia and depersonalisation. In this study, 201 participants (116 psychotherapy inpatients) completed German versions of the Cambridge Depersonalisation Scale (CDS), the Social Phobia Scale (SPS), the Social Interaction Anxiety Scale (SIAS), and the Symptom Checklist-90-R (SCL-90-R). A medium to large effect size between depersonalisation / derealisation and social fears was found. This link may be attributable to panic in response to social threat.

1.7.4 Obsessive-Compulsive Disorder

Dissociative symptoms have also been reported in patients with Obsessive Compulsive Disorder (OCD). Goff and colleagues (1992) administered measures of obsessive-compulsive behaviour, dissociation, and depression to 100 patients with OCD. In that study, scores on the DES were significantly correlated with scores on the Maudsley Obsessional Compulsive Inventory (MOCI) but not with scores on the Yale-Brown Obsessive-Compulsive Scale (YBOCS). In comparison with a previous study, OCD patients exhibited higher average scores than non-clinical controls and were comparable to patients with other anxiety disorders. Twenty percent of patients had significantly elevated DES scores. These results indicate that dissociative symptoms may coexist with symptoms of obsessive compulsive disorder. However, the authors note that some items of the DES overlap with OCD symptomatology (i.e., the disorders share specific features), which may artificially inflate DES scores (Goff, Olin, Jenike, Baer, & et al., 1992).

A similar study conducted by Grabe et al., (1999) evaluated the phenomenological association between differing obsessive-compulsive and dissociative symptoms. Seventy patients with OCD were administered the DES and the Hamburg Obsessive-Compulsive Inventory (HZI). Significant associations were found between dissociative symptoms and the

Checking subscale, and between dissociative symptoms and the Symmetry and Ordering subscale. No association was found for the Washing and Cleaning, Counting and Touching, or Aggressive Impulses and Fantasies subscales. HZI dimensions significantly discriminated patients with high dissociative symptomatology from those with low dissociative symptomatology (Grabe et al., 1999). These results are in line with those detailed by Goff and colleagues (Goff et al., 1992), and suggest the need for further, more detailed research.

The findings from these various studies accord with anecdotal reports from clinical practice of elevated dissociation in anxious patients and illustrate the blurred distinction between the anxiety and dissociative disorders as currently indexed differently in diagnostic manuals.

1.8 *The Present Study*

While the findings described above are consistent with the implied relationship between anxiety and dissociation, dissociative experiences are underestimated or neglected in clinical practice (Cassano et al., 1989; Nuller, 1982; Saxe et al., 1993) and have hardly been explored systematically in research. Recent reviews by Cardena and Spiegel (1996) and Gershuny and Thayer (1999) describe two fundamental issues that require exploration in understanding and accounting for the relationship between trauma, dissociative experiences, and anxiety / distress. Firstly, research has not systematically provided data on the various forms of anxiety symptomatology and how those specific fears (i.e., specific types of arousal) relate to dissociation (Gershuny & Thayer, 1999). Secondly, research has generally not examined the relationship between expressions of anxiety and specific forms of dissociation (Cardena & Spiegel, 1996). Rather, total dissociative scores have been compared between diagnostic groups. It may be that those who experience pathological levels of anxiety also experience

forms of dissociation considered more pathological (i.e., derealisation/ depersonalisation rather than absorption) or alternatively, that different expressions of anxiety are associated with different forms of dissociation.

In a related vein, research has failed to differentiate between those who develop post-traumatic (dissociative) symptomatology following trauma and those who do not. Merckelbach and Muris (2001) have argued that one or more factors must act as a third variable in the relationship between the experience of trauma and dissociation (Merckelbach & Muris, 2001). One such possible third variable could be Anxiety Sensitivity. *Anxiety Sensitivity* (AS) is a theoretically identified, stable personality trait defined as the fear of anxiety-related sensations (e.g., sweaty hands, perceived loss of control) that sensitises individuals to the perception of threat (or stressors) (Reiss, Peterson, Gursky, & McNally, 1986; Taylor, 1995). Those who are high on AS may possibly react earlier and more catastrophically to threat, possibly with dissociation. This relationship may help to account for the correspondence between peritraumatic dissociation and onset of PTSD.

Whether dissociation is also specifically a form of avoidance, differing from other types of avoidance in either kind or degree, is also yet to be established.

The present study is therefore designed to address many of the above concerns in relation to experiences of dissociation utilising a sample of patients seeking treatment or support for anxiety, and a comparison community sample. The study is intended to initiate further work in, and foster our understanding of, dissociative experience and its specific correlates.

1.8.1 Hypotheses

The present study will involve comparisons of dissociation and anxiety between two samples; (1) a sample from the clinical population who experience high levels of anxiety, recruited from the Anxiety Disorders Unit (ADU), support groups and a private practice in

Christchurch, and (2) a community sample drawn from the general public of Christchurch. It is hypothesised that clients with anxiety disorders will show elevated mean levels of anxiety and dissociation as compared with those from the community sample, indicating greater use of dissociation as means of affective self-regulation. It is also hypothesised that elevated levels of dissociation will be significantly related to elevated levels of anxiety, as will greater use of more 'pathological' forms of dissociation. Gender differences in levels of anxiety as a function of group membership are also expected. Epidemiological studies have found that in the general population, women experience anxiety more frequently than do men, but that this difference levels out in clinic samples (American Psychiatric Association, 2000). Examination of gender in relation to dissociation has revealed no difference between males and females in community samples or clinical samples (Putnam et al., 1996; Ross et al., 1990).

Multiple expressions of anxiety will be assessed including a general measure of anxiety (the BAI), panic, social anxiety, post-traumatic stress, anxiety sensitivity and generalised anxiety. Relevant prior research has not explored this range of anxiety expressions together in one study. Thus, the proposed research is exploratory and is not methodologically modelled from any prior research. Consequently, this does not allow for inference of magnitude of associations between each expression and dissociation and as such, there are no *a priori* hypotheses about which forms of anxiety will correlate highest with scores on dissociation indexes.

Lastly, the relationship between trauma, anxiety sensitivity and dissociation will be explored. It is hypothesised that the inclusion of Anxiety and Anxiety Sensitivity to Trauma will increase prediction of the observed variance in dissociation

1.8.2 Justification of Measures Used

In keeping with these objectives, a wide range of measures of anxiety and dissociative experiences were administered. The selection of these tests was made on the basis of theoretical findings (as described above) in addition to empirical findings specific to each test, ease of administration and scoring, and subject characteristics (e.g., fatigability).

1.8.2.1 Dissociative Experiences

Dissociation was assessed using the Curious Experiences Survey (CES: Goldberg, 1999) and the Scale of Dissociative Activities (SODAS: Mayer & Farmer, 2003). The CES is a revised version of the Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986); the most commonly administered self-report measure of dissociation. Although item content remains the same, modifications were designed to reduce the length and complexity of item content, the difficulties with the response format and the redundancy of item wording, thus making the scale more “user friendly”.

Scores on the CES have been found to be independent of gender, intelligence and educational attainment (Goldberg, 1999; Mayer & Farmer, 2003). As with the DES, there is a negative association with age (van Ijzendoorn & Schuengel, 1996). The author suggests that the scale’s reliability and validity are comparable to the DES, which has been shown to have excellent convergent and predictive validity, good test-retest reliability, and adequate internal consistency (Bernstein & Putnam, 1986; van Ijzendoorn & Schuengel, 1996). Independent examination of CES properties and construct validity revealed high internal consistency (coefficient alpha of 0.91) and test-retest reliability (Cann & Harris, 2003; Mayer & Farmer, 2003). Mayer and Farmer (2003) also report a significant negative correlation between the CES and the Balanced Inventory of Desirable Responding (BIDR), a measure of socially desirability.

The SODAS is a recently developed measure that offers a broader pragmatic coverage of dissociative experiences and a clearer response format than other measures of dissociation. The scale has evidenced high internal consistency, convergent validity, and construct validity, is temporally stable and not significantly influenced by social desirability (Mayer & Farmer, 2003). Good ecological validity has also been demonstrated by means of experiential sampling methodology (ESM) (Mayer & Farmer, 2003).

1.8.2.2 Anxiety

At the initiation of this research, no published research had explicitly examined any possible relationship between social phobia and dissociation. Nor had any adult studies been published examining the relationship between generalised anxiety and dissociative experiences, or between anxiety sensitivity and dissociative experiences. To address this gap, the Social Avoidance and Distress Scale (SADS), the Penn-State Worry Questionnaire (PSWQ), and the Anxiety Sensitivity Questionnaire – Revised (ASI-R) were included in the battery of psychometrics relating to anxiety.

The SADS was developed in conjunction with the Fear of Negative Evaluation Scale (FNE) for the assessment of social anxiety and related concerns regarding social-evaluative threat. These scales are commonly used in studies of social anxiety and social phobia.

The SADS has shown adequate test re-test reliability (Watson & Friend, 1969) and excellent internal consistency in both clinical and non-clinical populations (Oei, Kenna, & Evans, 1991; Watson & Friend, 1969). While the measure appears to be sensitive to social anxiety in general, there is mixed evidence regarding its discriminant validity (Heimberg, Hope, Rapee, & Bruch, 1988; Turner, McCanna, & Beidel, 1987), however, outcome studies have demonstrated that the SADS is sensitive to treatment change in social phobia (e.g., Cox, Ross, Swinson, & Dorenfeld, 1998).

The PSWQ is associated with high internal consistency and good test-retest reliability (Meyer, Miller, Metzger, & Borkovec, 1990). The construct validity of the scale is supported by the finding of a stronger association between the PSWQ and the cognitive scale ($r = .70$) of the Cognitive Somatic Anxiety Questionnaire than between the PSWQ and the somatic scale ($r = .55$) (Meyer et al., 1990). Using the PSWQ, individuals with GAD may be successfully discriminated from both the normal populace and persons from any other anxiety disorder group (Behar, Alcaine, Zuellig, & Borkovec, 2003; Brown, Antony, & Barlow, 1992; Meyer et al., 1990). Scores are not significantly related to social desirability (Meyer et al., 1990) and are sensitive to treatment outcome (Borkovec & Costello, 1993).

Anxiety Sensitivity is a theoretical dispositional characteristic that amplifies fear and other anxiety reactions and can predispose individuals to the development of anxiety-related conditions, particularly panic attacks and panic disorder (Reiss, 1991; Schmidt, Lerew, & Jackson, 1999; Schmidt, Lerew, & Joiner, 2000). The trait is linked with both agoraphobic avoidance and avoidance behaviours in general (Chambless & Gracely, 1989; de Ruiter & Garssen, 1989; Spira, Zvolensky, Eifert, & Feldner, 2004; Wilson & Hayward, 2006; Zvolensky & Forsyth, 2002). The ASI-R is the most commonly used measure of Anxiety Sensitivity in clinical and nonclinical populations. The index has a high degree of internal consistency, and adequate convergent and discriminant validity (Deacon, Abramowitz, Woods, & Tolin, 2003; Taylor & Cox, 1998; Zvolensky et al., 2003). Elevations in global anxiety sensitivity are found among people with panic disorder (PD), and have been found to reduce in those who have successfully completed cognitive-behavioural treatment for panic (Taylor & Cox, 1998).

Other measures of anxiety-related constructs were included to ensure a theoretically and empirically relevant range. These included the Beck Anxiety Inventory (BAI), the Fear Questionnaire (FQ), and the Traumatic Events Questionnaire (TEQ) and the civilian version of the PTSD Checklist (PCL-C). This range was important as the study aims to identify which aspects of anxiety are most closely related to dissociation.

The BAI (Beck, Epstein, Brown, & Steer, 1988) is one of the most widely used and well researched screening instruments for anxiety. It was designed specifically to differentiate anxiety from depression (an overlap that is problematic in the conceptualisation and measurement of both) and is thus dominated by somatic symptoms rather than general stress-related symptoms (Antony, Orsillo, & Roemer, 2001; Beck et al., 1988).

The measure has demonstrated excellent internal consistency in both clinical and non-clinical samples (Beck et al., 1988; Creamer, Foran, & Bell, 1995; Steer, Ranieri, Beck, & Clark, 1993). Adequate test re-test reliability, and good convergent and discriminant validity, have also been established (Beck et al., 1988; Hewitt & Norton, 1993; Osman, Barrios, Aukes, Osman, & et al., 1993; Wetherell & Areán, 1997).

The Fear Questionnaire is a widely used and well validated measure of common phobias. The scale has demonstrated good-to-excellent internal consistency in both clinical and non-clinical samples, good test re-test reliability, and discriminant validity (Cox, Swinson, Parker, Kuch, & et al., 1993; Michelson & Mavissakalian, 1983; Oei, Moylan, & Evans, 1991; Osman, Barrios, Osman, & Markway, 1993). Correlations between the FQ and other measures of agoraphobic avoidance are high (Cox et al., 1993). Lastly, scores of the FQ are sensitive to change following treatment (Marks & Mathews, 1979).

The PTSD Checklist (PCL-C) is one of only three self-report measures that were constructed with items corresponding to diagnostic criteria for PTSD; other widely used self-report instruments for PTSD (e.g., Impact of Event Scale) contain items that correspond less well with DSM-defined specific PTSD symptoms. Items correspond with symptoms that parallel diagnostic criteria B, C, and D for PTSD as delineated in the *Diagnostic and Statistical Manual for Mental Disorders* (American Psychiatric Association, 1994) although items were originally based on the revised version of the third edition (American Psychiatric Association, 1987).

The PCL-C has evidenced good diagnostic sensitivity and specificity (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers, Litz, Herman, Huska, & Keane, 1993). Ruggiero, Del Ben, Scotti, and Rabalais (2003) more recently also reported good discriminant validity. Strong test-retest reliability, strong internal consistency and strong convergent validity have also been established (Mueser et al., 2001; Ruggiero, Del Ben, Scotti, & Rabalais, 2003; Weathers et al., 1993).

Because this battery was so extensive, and the relationship between the two constructs relatively well studied, a measure of obsessive-compulsive behaviours was sacrificed in favour of the above questionnaires.

1.8.2.3 Substance Use

Dissociative experiences are commonly reported during or following intoxication with alcohol and / or drugs. For this reason, a substance use screening measure was included. The Texas Christian University Drug Screen – Version II (TCUDS-II) was employed for this purpose. The TCUDS-II is a revised and updated version of the TCUDS that can be applied in both community and correctional settings. In a study comparing the dominant self-report and

clinician-administered measures of substance abuse, positive predictive value and sensitivity was found to be highest for the TCUDS (Peters et al., 2000). Favourable psychometric properties, ease of administration and scoring, and favourable cost-benefit ratio were also expounded (Peters et al., 2000). The authors similarly report favourable psychometric properties (Knight, Simpson, & Morey, 2002).

CHAPTER TWO

METHOD

2.1 Participants

2.1.1 Anxiety Sample

A sample of 20 adults diagnosed with one or more anxiety disorders volunteered to participate in the present study. These participants were drawn from three sources including the Anxiety Disorders Unit of the Canterbury District Health Board (CDHB), support groups for individuals with agoraphobia and social phobia, and from a private practice in Christchurch city. All participants reviewed an information sheet (see Appendices A, B and C) and gave informed consent prior to participation (see Appendices D, E and F).

Seven clients (five women, two men) with a mean age of 35.33 years ($SD = 14.69$) were drawn from the Anxiety Disorders Unit (ADU). These participants were recruited by (a) mail out to client's waitlisted for treatment and (b) in liaison with ADU staff either following their initial assessment or in the first treatment session.

Six participants were recruited from the Agoraphobic Support Group (Canterbury) and one from the Social Phobia Support Group (Canterbury). Two participants were men, and four were women, with a mean age of 40.16 ($SD = 21.7$). Participants from the support groups were recruited via advertisement in the groups' monthly newsletter and in person at a monthly meeting.

Seven participants (three male, four female) with a mean age of 37.66 ($SD = 9.33$) from a private practice in Christchurch city were also recruited. Participants from private practice were recruited by their therapist, a registered, clinical psychologist.

Participants from these three sources were pooled into a single group, consisting of 13 women and seven men, ranging in age from 18 – 69 years ($M = 37.72$, $SD = 15.23$). Selection

into this group was based on the participants (a) having a diagnosis of at least one anxiety disorder, made by either a clinical psychologist or a psychiatrist, and (b) having not received treatment or being in the early stages of treatment for that anxiety disorder. Seven participants had panic disorder (with or without agoraphobia), six had social phobia, three met criteria obsessive-compulsive disorder, six met criteria for posttraumatic stress disorder, three for generalised anxiety disorder, and two had anxiety disorder not other specified (ADNOS). Due to limited numbers of volunteers, participants were not excluded on the grounds of concomitant mood disorder or other diagnoses. Of those who reported comorbid diagnoses ($N = 7$), six had unipolar mood disorders and two had eating disorders.

Due to budgetary constraints, no financial incentive was offered to individuals in this sample. However, these individuals were encouraged to participate by means of a brief summary of their individual results and the provision of psychometric data to their primary therapist (a form of incentive that has been used in other research and with which staff at the Anxiety Disorders Unit were comfortable).

2.1.2 Community Sample

A comparison control sample ($N = 74$) was drawn from the volunteer database at Department of Psychology. The Psychology Department Research Panel is comprised of 950 individuals from throughout New Zealand. In 2000, some five thousand New Zealand citizens who were listed on the electoral roll were selected at random and invited to join the database (Dr Christopher Burt, personal communication, October 17th 2005). Of the 950 currently on the database, 115 were from Christchurch. Invitations to participate in the present study were sent to these individuals, along with information and consent forms (see Appendices G and H). Of those 115, 78 agreed to participate and were posted a package of questionnaires. Seventy-four returned these questionnaires, and comprised the present community sample.

This group consisted of 42 women and 32 men, ranging in age from 26 – 85 years ($M = 56.68$, $SD = 14.24$). Participants were offered an incentive in the form of a \$5 gift voucher for the Warehouse NZ⁴.

Participants in both the anxiety and control groups were over 18 years old, and were not excluded on the basis of gender, ethnicity, socioeconomic status or occupation. Given the limited number of people willing to participate, neither randomisation nor participant-matching were possible. All participants gave informed consent, and none sought to exclude their data once given.

2.2 Measures

Participants completed a battery of self-report psychometric questionnaires assessing dissociative experiences, trauma, panic, generalised anxiety, social phobia and posttraumatic stress, in addition to anxiety sensitivity and substance use. A demographic questionnaire was also included (see Appendices I and J). Unpublished measures not freely available [marked with an asterisk (*)] were reproduced and used with permission of the authors. Based on total item number, it was estimated that completion of this battery would take 45 – 55 minutes.

2.2.1. *Curious Experiences Survey* (CES): (Goldberg, 1999)

The CES (Appendix K) consists of 31 items that are responded to on a 5-point Likert scale. Responses range from 1 (“This never happens to me”) to 5 (“This is almost always happening to me”). Higher scores indicate more frequent dissociative experiences. Total scores range from 31 (never endorsing any of the experiences) to 155 (all experiences

⁴ There was no exploration of psychiatric disorders in this sample. In retrospect, however, exclusionary criteria for the control sample (particularly history of psychiatric illness) would have enhanced the methodology of the present study.

happening almost always). Three subscales characterising depersonalisation, absorption and amnesia were identified from factor analytic procedures (Cann & Harris, 2003; Goldberg, 1999). Scores from these three subscales were used in the present study. The *depersonalisation* scale is comprised of eight items with a range of 8 - 40; the *absorption* scale is comprised of eight items (range 8 - 40); and the *amnesia* scale of five items (range 5 - 25). The author does not offer norms, but did report that 79% of their sample scored between 31 and 51, another 18% in the range of 52 - 68, and fewer than 4% above that (Goldberg, 1999). Cann and Harris (2003) report a mean score of 62.88 ($SD = 15.2$, range 38 - 128) in a student sample (Cann & Harris, 2003). In a sample of 533 students, Mayer and Farmer (2003) report mean CES scores of 53.57 ($SD = 14.52$, range 31 - 134).

2.2.2. *Scale of Dissociative Activities* (SODAS): (Mayer & Farmer, 2003)

The recently developed SODAS (Appendix L) is a 35-item measure of dissociation. Respondents are required to indicate if, and how often, they have had each experience from five response options (N = Never to VF = Very Frequently). Higher scores on the SODAS indicate more frequent experiences of dissociation (range 35 - 175). Experiences assessed represent depersonalisation, derealisation, attentional disruptions, amnesia, self-awareness vs. identity disturbance, distinction between reality and fantasy, disengagement in behaviour, automaticity, absorption, non-acceptance of experience, flashbacks, and inner peace vs. turmoil. In a sample of 533 predominantly Caucasian students (mean age 23.30 years) the authors report a mean score of 66.90 ($SD = 18.59$, range 36 - 145) (Mayer & Farmer, 2003).

2.2.3. *Beck Anxiety Inventory* (BAI): (Beck, Epstein, Brown, & Steer, 1988)

The BAI is a 21-item self-report measure that assesses severity of symptoms of anxiety. On a 4-point Likert scale, respondents indicate the extent to which they have been bothered

by each symptom during the past week. Responses range from 0 “not at all” to 3 “severely: I could barely stand it”. Scores from the 21 items are summed to yield a single anxiety score (range 0 – 63) with higher scores indicating higher levels of anxiety. Suggested cut-off scores are described by the authors (Beck & Steer, 1990) who advise that scores of 0 – 7 points be interpreted as normal anxiety; 8 – 15 as mild; 16 – 25 as moderate; and 26 – 63 as severe anxiety. These cutoffs will be used in the present study.

2.2.4. *Anxiety Sensitivity Index – Revised* (ASI-R-36): (Taylor & Cox, 1998)*

The ASI-R (Appendix M) is a 36-item self-report questionnaire designed to measure anxiety sensitivity (i.e., fear of anxiety-related sensations). On a 5-point Likert scale (0 = very little to 4 = very much), respondents indicate the extent to which they are concerned about potential unpleasant consequences of anxiety symptoms. Items fall into six subscales that assess each of the major domains of Anxiety Sensitivity. These include (1) fear of respiratory symptoms (range = 0–28), (2) fear of publicly observable anxiety reactions (range = 0 – 32), (3) fear of cardiovascular symptoms (range 0 – 24), (4) fear of cognitive discontrol (range 0 – 20), (5) fear of gastrointestinal symptoms (range 0 – 16), and (6) fear of dissociative and neurological symptoms (range 0 – 24) (Taylor & Cox, 1998). Total scores range from 0 to 144 with higher scores indicative of higher levels of anxiety sensitivity. Both subscale and total scores will be used in the present study.

2.2.5. *Fear Questionnaire* (FQ): (Marks & Matthews, 1979)*

The FQ (Appendix N) is a self-report measure designed to assess the severity of common phobias and associated symptoms of anxiety and depression. The primary scale (*Total Phobia Scale*) is comprised of 15 items (items 2 – 16) describing common specific fears. Respondents indicate to what extent they avoid these experiences on a 9-point Likert scale. Total scores

range from 0 to 120 with higher scores indicating greater phobic avoidance. From this primary scale, three 5-item subscales can be used to derive sub-scores in the areas of *Agoraphobia*, *Blood / Injury*, and *Social*. In each subscale, scores range from 0 – 40, with higher scores again indicating greater phobic avoidance.

In addition, the FQ includes a 5-item anxiety / depression measure. On a 9-point Likert scale, respondents indicate how troublesome they find these indicators of general affective disturbance (range 0 – 40). Lastly, the FQ has a *Global phobia* score derived from a 9-point Likert scale on which respondents rate the degree to which they find their phobic avoidance distressing and disabling (range 0 – 9).

Both total and subscale scores will be used in the present study.

2.2.6. *Social Avoidance and Distress Scale (SADS)*: (Watson & Friend, 1969)

The SADS (Appendix O) consists of 28 self-report items that measure distress in and avoidance of social situations. Each item is rated “true” or “false”. Responses matching the scoring key are allocated one point (range 0 - 28) with higher scores reflecting greater social anxiety. No time period is designated for determining the presence or absence of a symptom. Mean scores derived from the development (normal) sample were 11.2 for males and 8.24 for females (Watson & Friend, 1969). Mean scores from a sample of people seeking treatment for an anxiety disorder were 14.3 ($SD = 8.7$) for males and 14.9 ($SD = 8.4$) for females, while patients with a diagnosis of social phobia scored, on average, 20.7 ($SD = 5.1$) (Oei, Kenna et al., 1991).

2.2.7. *Penn-State Worry Questionnaire (PSWQ)*: (Meyer, et al., 1990)*

The PSWQ (Appendix P) assesses a respondent’s general tendency to excessive and uncontrollable worry. The 16-item self-report measure was specifically developed to assess

general worry, with no reference to the specific content of worries. Responses are made on a 5-point Likert response scale that characterises how typical the respondent feels the statement is of him / her (“not at all typical of me” to “very typical of me”). Five items are reverse scored. Possible scores range from 16 to 80, with higher scores reflective of higher levels of worry. An average score of 42.2 (SD = 11.2) was derived from a normative community sample matched to US census data, while an average of 28.19 (SD = 7.10) has been found in control participants with no history of anxiety or depression (Behar et al., 2003; Gillis, Haaga, & Ford, 1995). Patients with Generalised Anxiety Disorder (GAD) average 68 (Behar et al., 2003; Borkovec & Costello, 1993; Brown et al., 1992; Meyer et al., 1990).

2.2.8. *Traumatic Events Questionnaire* (TEQ): (Lauterbach & Vrana, 1993)*

The TEQ (see Appendix Q) is a self-report measure of exposure to traumatic events. The questionnaire encompasses 11 types of trauma that were selected from the DSM-III-R and relevant empirical literature. Two residual categories are also incorporated, that allow respondents to report (1) any other event(s) that they perceive as traumatic but which are not listed and (2) any event(s) that they perceive as too traumatic to report elsewhere in the questionnaire. Respondents who do not endorse any items are asked to describe the most traumatic experience that they have had.

For each event endorsed or documented, respondents record the number of times the event occurred and their age at the time of the event. Respondents also rate on a 7-point Likert scale (1 = not at all to 7 = extremely) whether they were injured, whether they felt that their life was threatened, how traumatic the event was for them at the time, and how traumatic it is for them at present. Responses to these four items may be summed for the worst event to obtain a *trauma intensity* score (range = 4 to 28)⁵. A *trauma exposure* score is produced by summing

⁵ Respondents who endorse more than one item are asked to indicate which was the most traumatic.

the number of events that the individual reports experiencing (sum of all “yes responses to item a; continuous events such a sexual abuse are counted once only). All possible scores will be derived in the present study.

In a sample of 440 college students, the authors report that eighty-four percent reported at least one traumatic event, while approximately one-third of the students reported four or more individual events. Males experienced more events than females (Vrana & Lauterbach, 1994).

The authors report excellent test-retest reliability ($r = 0.91$) (Lauterbach & Vrana, 1993).

2.2.9. *PTSD Checklist (PCL-C)*: (Weathers et al., 1993)*

The PCL (Appendix R) is a 17-item self-report rating scale that assesses the presence and severity of specific symptoms of Posttraumatic Stress Disorder (PTSD). Respondents are asked to rate how much each symptom has bothered them over the past month. Responses are made on a 5-point Likert scale (1 = *not at all* to 5 = *extremely*). Military (PCL-M) and civilian (PCL-C) versions are available. The civilian version, used in the present study, is written generically to apply to any event.

The PCL can be used as a continuous measure of symptom severity by summing scores over all 17 items. The recommended cut-off score is 50. Alternatively, it can be used to derive a PTSD diagnosis by considering a score of 3 (*moderately*) or higher on an item, then following the diagnostic rules outlined in the *Diagnostic and Statistical Manual for Mental Disorders* (American Psychiatric Association, 1994).

2.2.10. TCU Drug Screen (TCUDS-II): (Knight, Simpson, & Hiller, 2002)

The TCUDS-II is a combined drug and alcohol use screening instrument, comprised of 15 items that represent key clinical features of substance dependence. The first part of the instrument is a series of nine ‘yes or no’ questions about problems relating to drug and

alcohol use. “Yes” responses are allocated 1 point. Items are then summed to create a *drug use severity* index (range 0 – 9). Scores of 3 or greater indicate relatively severe drug-related problems and correspond approximately to DSM drug dependence diagnosis (Knight, Simpson, & Morey, 2002).

The second part of the instrument addresses frequency of drug use in addition to a self-assessment of readiness for treatment. Responses to these items are qualitative.

2.3 Procedure

Ethical approval was obtained from the Canterbury Health and Disability Ethics Committee and from the University of Canterbury Human Ethics Committee (see Appendices W and X). Procedural concerns were discussed with staff at the Anxiety Disorders Unit, with the psychologist in private practice and with support group staff. All participants read an information sheet and gave informed consent before completing the battery of self-report questionnaires and demographic information described above. Questionnaires were returned using self-addressed postage-paid return envelopes to the Department of Psychology at the University of Canterbury.

CHAPTER THREE

RESULTS

3.1 Design and Statistical Considerations

The major focus of this study was to examine the relationship between measures of dissociation and measures of anxiety, without any attempt at experimental manipulation. The resulting data were generally analysed with correlational methods. Group comparisons were possible, based first on demographic attributes such as age and gender, and also whether a participant was recruited from an anxiety treatment setting (anxiety group) or from the community (community group). Gender, age and group status were coded and included as predictor variables in various regression analyses. Age and gender were selected as potential confounds, since age has been shown to be related to endorsement of items pertaining to dissociative experiences (Goldberg, 1999; Ross et al., 1990), while gender has been shown to be associated with anxiety (Kaplan & Saddock, 1998). Anxiety vs. community group status was predicted to be consistently associated with higher levels of symptoms on all anxiety measures.

Unless otherwise specified, inferential statistics and correlations were evaluated against an alpha level of .05. Likewise, pairwise deletion of missing data was utilised.

3.2 Demographic Characteristics

In order to determine whether participants were representative of the city of Christchurch, the demographic characteristics of participants from both the community and anxiety groups were compared to the 2001 census data (see Table 1).

Visual inspection of the demographic data suggests that gender and ethnic distribution for the community sample was similar to the distribution found in the census data. However,

the community sample appears to be appreciably older and more highly qualified than would be expected from census data, and more appear to be married or in committed partnerships, and to occupy professional or clerical employment.

Table 1.

Demographic Characteristics of the Community Sample and Anxiety Sample in comparison with Christchurch City (where applicable)

Personal Characteristics	Community Sample (%)	Anxiety Sample (%)	Christchurch City (%)
<i>Gender</i>			
Male	32 (43.24)	7 (35.00)	114,528 (47.29)
Female	42 (56.76)	13 (65.00)	127,650 (52.71)
<i>Ethnicity</i>			
NZ European	70 (94.59)	16 (80.00)	212,325 (87.67)
NZ Maori	3 (4.05)	1 (5.00)	12,771 (5.27)
Other	0 (0.00)	1 (5.00)	1,263 (0.52)
Unidentifiable / Not Stated	1 (1.35)	2 (10.00)	7,167 (2.96)
<i>Age group</i>			
18-24 Years	0 (0.00)	4 (20.00)	34,509 (14.24)
25-39 Years	5 (6.75)	11 (35.00)	71,496 (29.52)
40-59 Years	47 (63.51)	5 (25.00)	80,178 (29.44)
60-79 Years	13 (17.56)	2 (10.00)	44,529 (18.38)
80+ Years	7 (9.45)	0 (0.00)	11,469 (4.73)
Unidentifiable / Not Stated	2 (2.7)	2 (10.00)	
<i>Qualifications</i>			
No Qualification	9 (12.16)	4 (20.00)	54,105 (22.34)
School Qualification	20 (27.02)	6 (30.00)	85,251 (35.20)
Vocational Qualification	23 (31.08)	3 (15.00)	44,988 (18.58)
Bachelor Degree or Higher	17 (22.97)	5 (25.00)	28,368 (11.71)
Unidentifiable / Not Stated	5 (6.76)	2 (10.00)	29,472 (12.17)
<i>Marital Status</i>			
Single (Never Married)	10 (13.51)	11 (55.00)	-
Married / Committed Partnership	51 (68.91)	7 (35.00)	-
Separated / Divorced	7 (9.45)	0 (0.00)	-
Widowed	5 (6.75)	1 (5.00)	-
Not Specified	1 (1.35)	1 (5.00)	-
<i>Occupation</i>			
Professionals and Associate Professionals	26 (35.13)	2 (10.00)	60,210 (24.86)
Clerical / Service and Sales	19 (25.67)	3 (15.00)	38,097 (15.73)
Trades Workers	4 (5.40)	0 (0.00)	16,110 (6.65)
Labourers and Elementary Service Workers	1 (1.35)	0 (0.00)	21,756 (8.97)
Retired	17 (22.97)	0 (0.00)	-
Beneficiary	2 (2.70)	9 (45.00)	-
Student	0 (0.00)	3 (15.00)	-
Not Elsewhere Included / Not Specified	5 (6.75)	3 (15.00)	102,912 (42.49)

Note: Table and Christchurch City figures adapted from New Zealand 2001 Census of Population and Dwellings. Census data on marital status measured as *Legal Spouse* (45%), *Other Partnerships* (11.46%), *Non Partnered* (38.15%), and *Not Stated* (5.47%).

When compared with the census data, the anxiety group participants were predominantly female and more likely to be single. Almost half (45%) of this sample were recipient of either sickness or unemployment benefits. However, participants in this group reported similar qualification levels to that reported in census data, with the exception of a higher proportion who had achieved a bachelor degree (or higher).

Between-groups comparison of demographic variables revealed a significant difference in age [$t(88) = 4.98, p < .001$]. Participants in the anxiety group were younger ($M = 37.72, SD = 15.23$) than participants in the community group ($M = 56.68, SD = 14.24$).

3.3 Descriptive Data for Measures of Anxiety and Dissociation

3.3.1 Distribution and Dispersion of Scores

Figures 1 – 9 illustrate the distribution of scores between anxiety and community groups on each measure of dissociation and anxiety (see Appendix S to review the histograms for each measure).

As shown in Figures 1 to 3, the scores for the community sample on the CES and SODAS appear to be relatively normally distributed, while the scores for the anxiety sample are clearly positively skewed. The plots also show substantial variance in scores for the anxiety group. This indicates that proportionally more participants from the anxiety group scored higher on the dissociative measures.

Positive skew is evident for both samples on the BAI, FQ and PCL-C although this is more pronounced for the anxiety group (see below), indicating that more participants in the anxiety group scored higher on these measures. On the ASI-R (see Figure 4), positive skew is evident for the community sample, but the distribution appears to be slightly negatively skewed for the anxiety sample, indicating that many of participants in the anxiety group

scored highly on the ASI. A similar (though more pronounced) pattern is evident on both the SADS (Figure 7) and PSWQ (Figure 8).

That positive skew is evident for these measures may, in part, be accounted for by floor effects.

3.3.2 Measures of Central Tendency

Descriptive statistics for each measure are presented in Table 2. A series of *t*-tests were conducted between-groups for each dependent measure. As expected, the anxiety group reported significantly higher scores, on average, than the control group on all measures of anxiety. On the BAI, 64% of the community sample scored in the range described by the authors as ‘normal anxiety’, but only one of the anxiety sample participants also scored in this range.

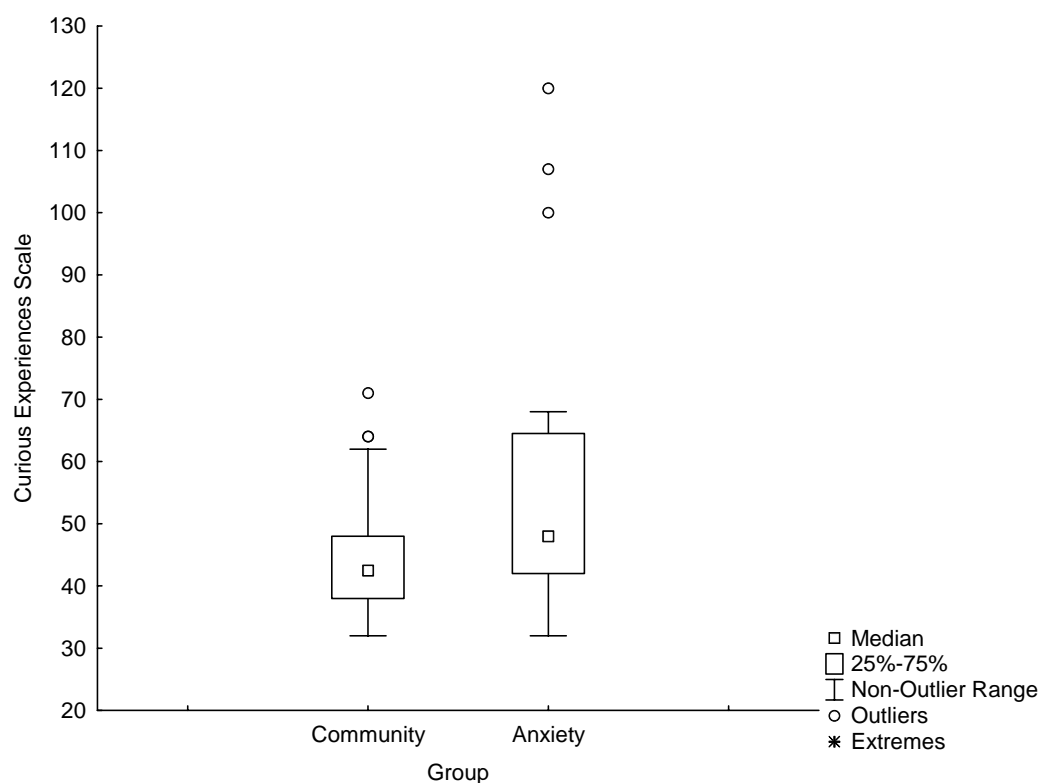


Figure 1. Group distributions of scores on the Curious Experiences Survey

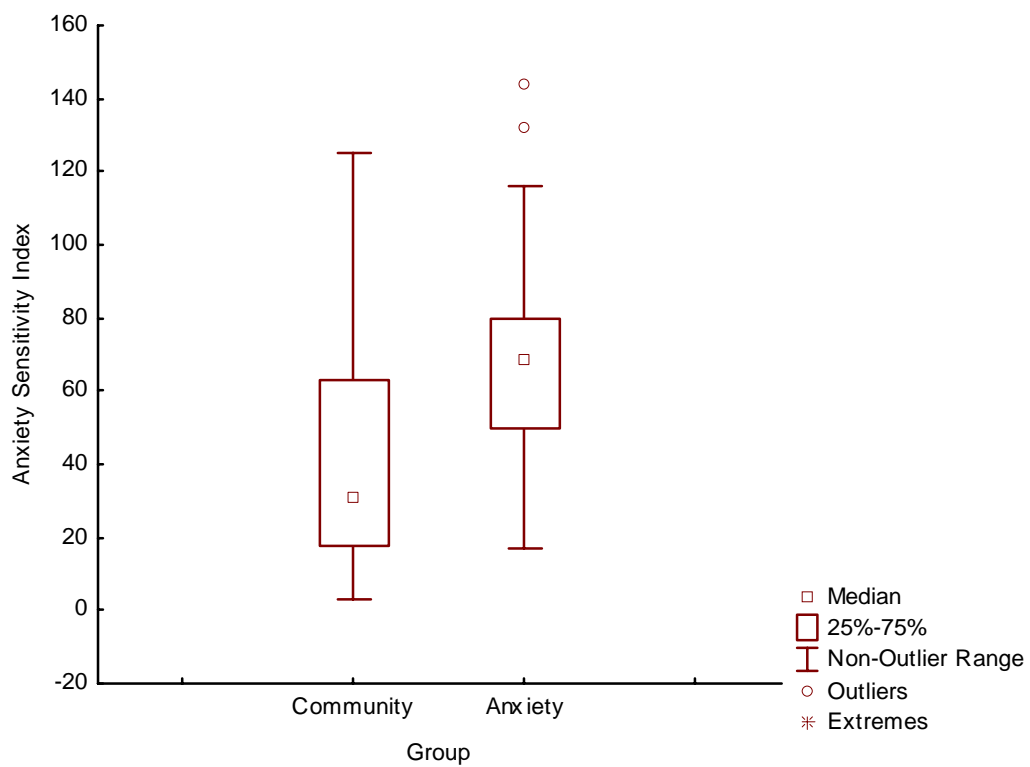


Figure 4. Group distributions of scores on the Anxiety Sensitivity Index – Revised.

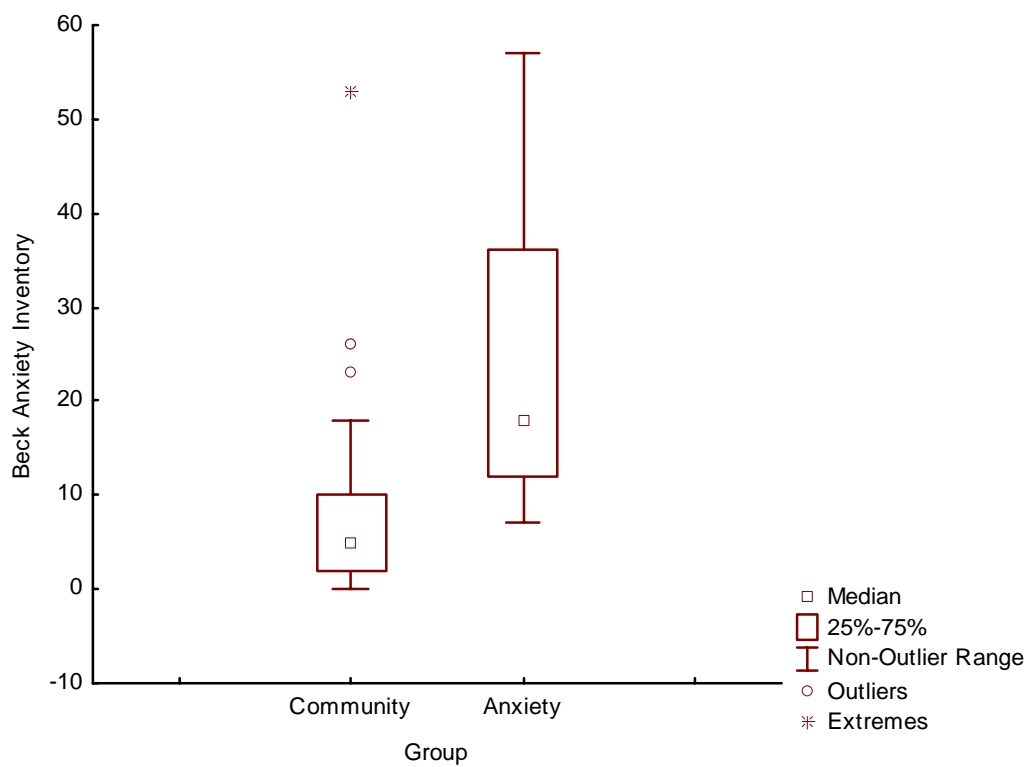


Figure 5. Group distributions of scores on the Beck Anxiety Inventory

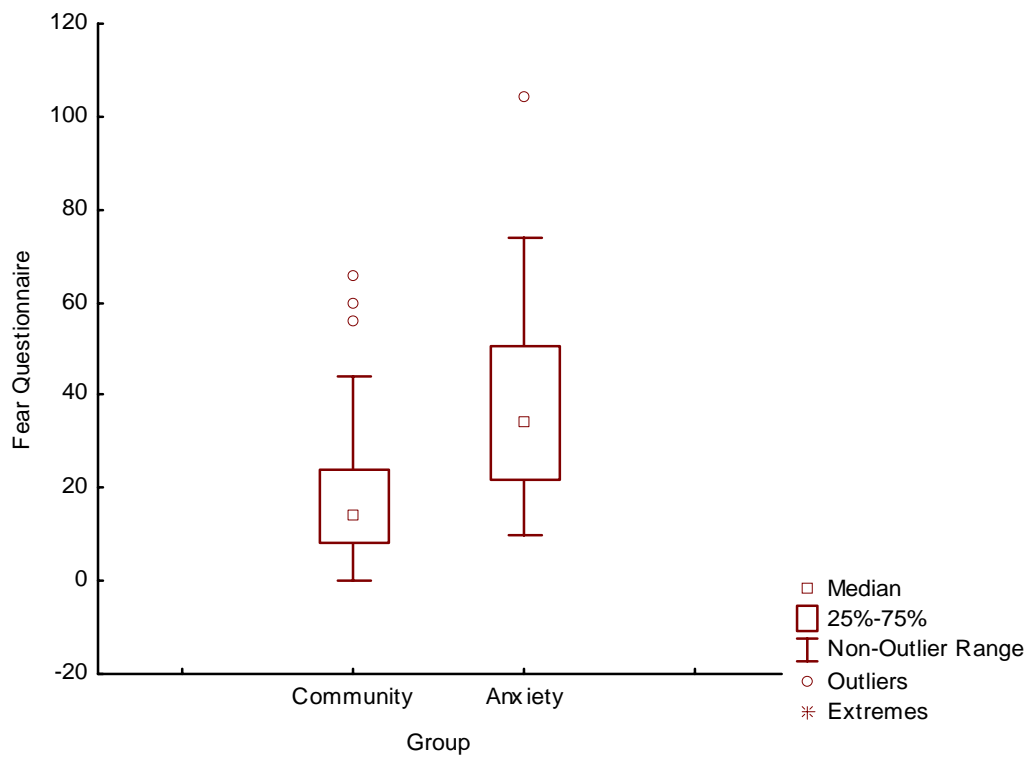


Figure 6. Group distributions of scores on the Fear Questionnaire

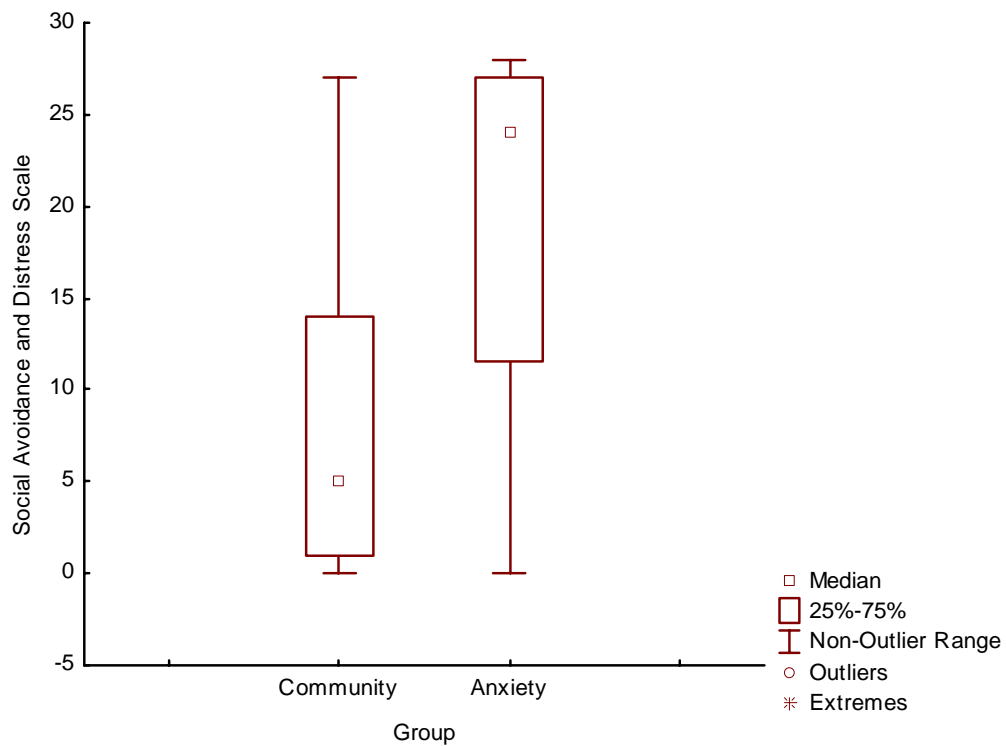


Figure 7. Group distributions of scores on the Social Avoidance and Distress Scale

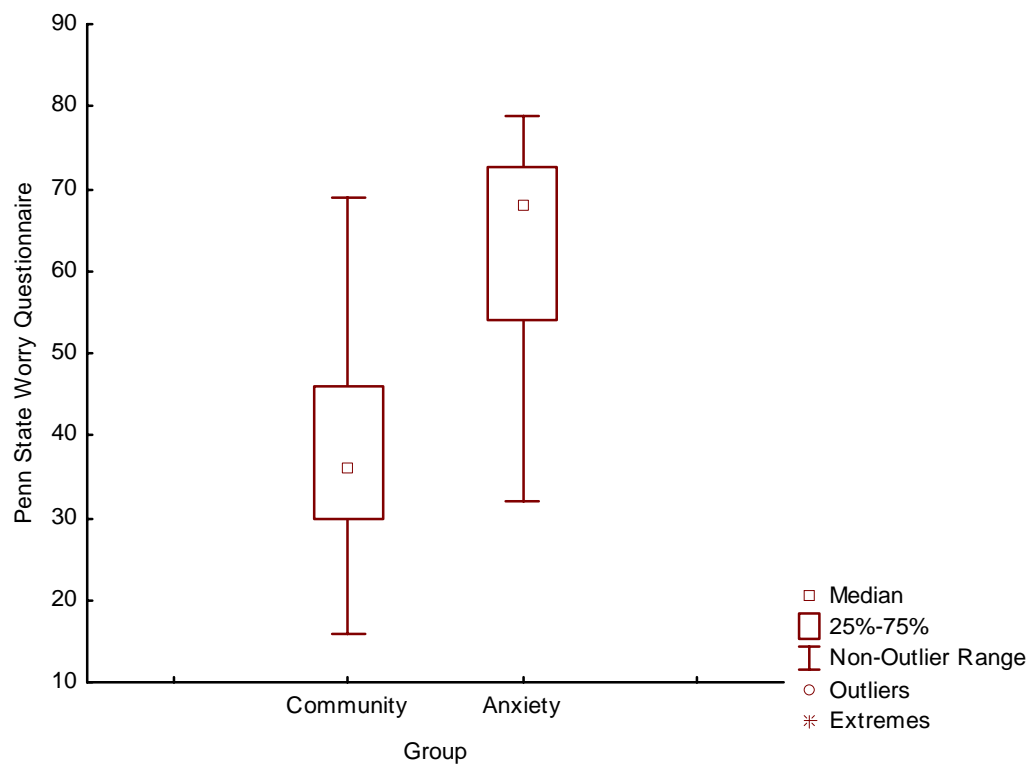


Figure 8. Group distributions of scores on the Penn State Worry Questionnaire

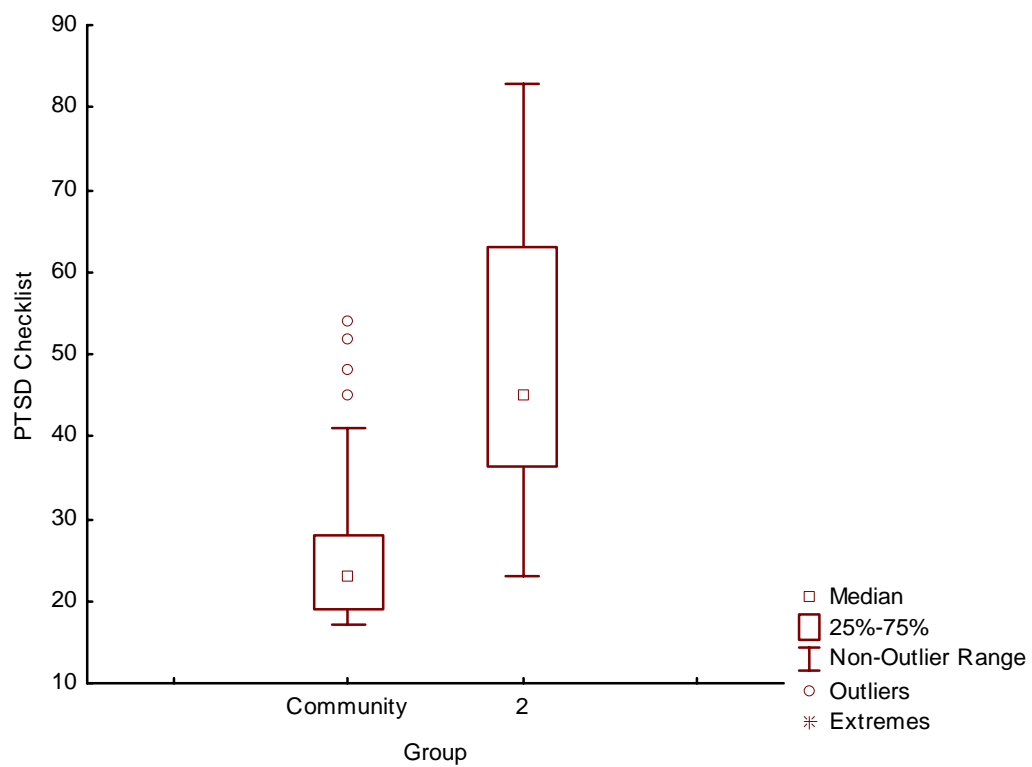


Figure 9. Group distributions of scores on the PTSD Checklist – Civilian Version

Of the remaining community sample, 30% scored in the mild – moderate range and 4% in the severe range, compared with the remaining anxiety sample where 60% scored in the mild – moderate range, and 30% in the severe range.

Mean scores for the anxiety group on the SADS are consistent with previous research, that suggests that people seeking treatment for anxiety disorders score around 15 while people with social phobia score, on average, 20 (Oei, Kenna et al., 1991). The mean score for the community sample on the PSWQ was also consistent with previous research indicating that average community samples score is 42.2 ($SD = 11.2$) (Behar et al., 2003) as was the mean score for the anxiety sample on the PSWQ which is similar to scores found for patients with Generalised Anxiety Disorder (GAD) (Gillis et al., 1995; Meyer et al., 1990) . Two people (3%) in the community sample and eight people in the anxiety sample (40%) scored above the recommended cut-off score of 50 on the PCL-C for probable posttraumatic stress disorder.

The anxiety group also reported significantly higher mean scores on the CES ($M = 57.65$, $SD = 24.44$) than did the community sample ($M = 44.26$, $SD = 8.39$). Overall, 86% of the community group scored between 31 and 51, 12% scored in the range of 52 – 68, and 1% scored above that. In the anxiety group, 55% scored between 31 and 51, 30% scored in the range of 52 – 68, and 15% scored above that.

Similarly, significant differences were found for the SODAS, with the anxiety group scoring higher ($M = 89.50$, $SD = 33.71$) than the community group ($M = 53.24$, $SD = 12.32$). Overall, 80% of the community group scored between 35 and 59, 17% scored between 60 – 79, and 3% scored above that. In contrast, 20% of the anxiety group scored between 35 – 59, 30% scored between 60 – 79, and 50% scored above that.

Table 2.
Descriptive Statistics Associated with Measures of Dissociation and Anxiety

	<u>Whole Sample</u>				<u>Community Group</u>				<u>Anxiety Group</u>				
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>p</i>
<i>Dissociation Indices</i>													
CES	94	47.11	14.14	32-120	74	44.25	8.39	32-71	20	57.65	24.44	32-120	***
SODAS	94	60.95	23.96	35-160	74	53.24	12.32	35-100	20	89.50	33.71	43-160	***
<i>Anxiety Indices</i>													
BAI	91	10.58	12.37	0-57	72	6.85	8.06	0-53	19	24.74	15.55	7-57	***
ASI-R	94	46.23	32.41	3-144	74	39.71	29.13	3-125	20	70.35	33.20	17-144	***
FQ	93	22.34	18.41	0-104	73	17.68	13.73	0-66	20	39.35	23.23	10-104	***
SADS	94	10.45	9.47	0-28	74	8.04	7.93	0-27	20	19.40	9.5	0-28	***
PSWQ	94	43.69	16.04	16-79	74	38.38	12.29	16-69	20	63.35	12.74	32-79	***
PCL-C	93	30.69	14.63	17-83	73	25.66	8.43	17-54	20	49.10	17.71	23-83	***
<i>Trauma</i>													
TEQ-TE	89	3.40	3.37	0-13	73	3.33	3.27	0-12	16	3.75	3.85	0-13	ns
TEQ-TI	91	10.06	7.10	0-27	72	8.62	6.16	0-26	19	15.52	7.89	0-27	***

Note. CES = Curious Experiences Survey, SODAS = Scale of Dissociative Activities, BAI = Beck Anxiety Inventory, ASI-R = Anxiety Sensitivity Index - Revised, FQ = Fear Questionnaire, SADS = Social Avoidance and Distress Scale, PSWQ = Penn State Worry Questionnaire, PCL-C = PTSD Checklist, TEQ-TE = Traumatic Events Questionnaire - Trauma Exposure, TEQ-TI = Traumatic Events Questionnaire – Trauma Intensity.

N varies as a function of missing data.

* $p < .05$ ** $p < .01$, *** $p < .001$ (two-tailed).

Because the response format and item totals on the CES and SODAS were similar, *t*-tests comparing mean scores between groups were conducted. Mean scores in the SODAS were higher than on the CES for both the community [$t(146) = -5.18, p < .001$] and anxiety groups, [$t(38) = -3.42, p < .001$] (see Table 2 for group means and standard deviations).

Scores on the measures of dissociation were converted to *z*-scores for purposes of between-groups comparison. As illustrated in Figure 10, the anxiety group scored, on average, 1.7 standard deviations above the community sample on the CES, and 3 standard deviations above the community sample on the SODAS.

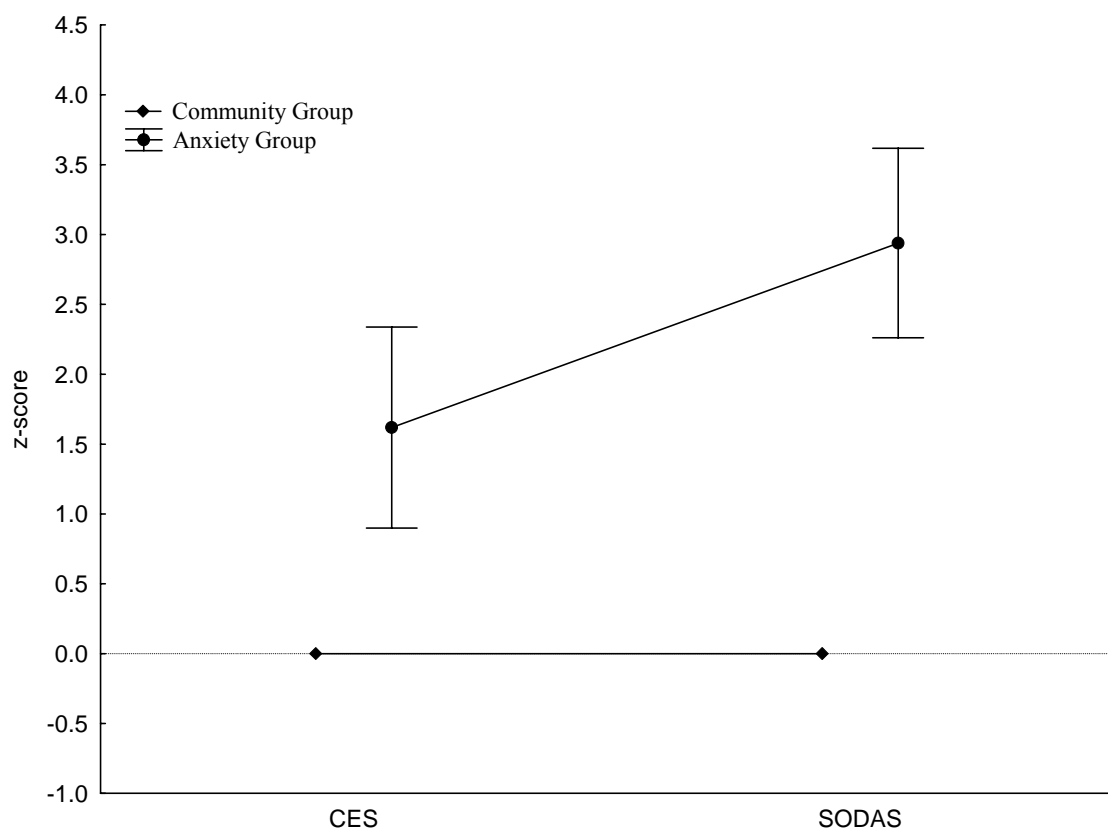


Figure 10. Comparison between community and anxiety samples on measures of dissociation [Note that whiskers denote the standard error line].

There was no significant difference between-groups on mean exposure to traumatic events (TEQ-TE) (see Table 2). At least one person in each group reported exposure to each event described on the TEQ on one or more occasion (see Table 3). Note, however, that proportionally more participants in the anxiety group reported experiencing child sexual abuse, unwanted adult sexual experiences, and physical (or other) abuse as adults. Endorsement of items in which the traumatic event is not specified (i.e., items 10 and 11) was also substantially higher in the anxiety group.

Table 3.
Traumatic Experiences Endorsed by Participants in Community and Anxiety Samples

<i>TEQ Item</i>	Community Group N (%)	Anxiety Group N (%)
Item 1. Have you ever been in a <u>serious</u> industrial, farm or car accident, or large fire or explosion?	21 (28.38)	9 (45.00)
Item 2. Have you been in a natural disaster such as a tornado hurricane, flood or major earthquake?	18 (24.32)	3 (15.00)
Item 3. Have you ever been the victim of a violent crime such as rape, robbery, or assault?	6 (8.11)	8 (40.00)
Item 4. <u>As a child</u> , were you the victim of either physical or sexual abuse?	15 (20.27)	9 (45.00)
Item 5. <u>As an adult</u> , have you had any unwanted sexual experiences that involved the threat or use of force?	1 (1.35)	6 (30.00)
Item 6. <u>As an adult</u> , have you ever been in a relationship in which you were abused either physically or otherwise?	6 (8.11)	6 (30.00)
Item 7. Have you ever witnessed someone who was mutilated, seriously injured or violently killed?	12 (16.21)	3 (15.00)
Item 8. Have you been in serious danger of losing your life or of being seriously injured?	24 (32.43)	6 (30.00)
Item 9. Have you received news of the mutilation, serious injury, or violent of unexpected death or someone close to you?	31 (41.89)	8 (40.00)
Item 10. Have you had any other <u>very traumatic</u> event like these?	8 (10.81)	4 (20.00)
Item 11. Have you had any experiences like these that you feel you can't tell about (note: you don't have to describe the event).	4 (5.41)	5 (25.00)

A significant between-group difference in Trauma Intensity (TEQ-TI) score was found (see Table 2). This indicates that, on average, participants in the anxiety group perceived their experiences to be more traumatic than participants in the community group.

3.4 Gender and Age Effects on Measures of Anxiety and Dissociation

Because age has been shown to effect scores on dissociative measures, and gender to effect scores on measures of anxiety, age and gender effects were examined. Gender and age differences between groups for each measure are displayed in Table 4. Inferential statistics comparing the effects of gender and age between groups could not be calculated due to insufficient sample sizes, however, overall effects of age and gender (without group separation) were examined by means of Pearson's r correlations and with multivariate analysis of variance (MANOVA).

Pearson's correlations revealed a significant association between gender and scores on the PSWQ ($r = .26, p = .01$) with women scoring higher than men, but no association with other anxiety measures. Significant negative correlations were found between age and scores on the BAI ($r = -.26, p = .015$), FQ ($r = -.34, p = .001$), SADS ($r = -.32, p = .002$), PSWQ ($r = -.44, p = .000$), and PCL-C ($r = -.31, p = .003$) A two-way (2 gender x 5 age) between-groups MANOVA was performed to investigate age and gender differences on measures of anxiety. Total scores from all anxiety measures were entered as dependent variables, while age and gender were entered as independent variables. Overall, an effect of age was found $F(24, 245) = 1.57, p = .05$ but no effect of gender [$F(6, 70) = 2.18, p = .054$]. Univariate analyses revealed age effects for the PSWQ [$F(4, 75) = 3.32, p = .01$], and for the PCL-C [$F(4, 75) = 3.13, p = .02$].

Pearson's correlations revealed a significant negative relationship between age and scores on both the CES ($r = -.25, p = .017$) and SODAS ($r = .31, p < .003$), but no relationship with gender. A second MANOVA with the dissociation measures (i.e., CES and SODAS) as dependent variables revealed no overall effect of age [$F(8, 158) = 1.89, p = .06$] or gender [$F(2, 79) = .99, p = .63$].

Table 4.
Dissociation and Anxiety Measures: Means and Standard Deviations by Gender and Age Bracket

Group	Gender	Age	N	CES		SODAS		BAI		ASI-R		FQ		SADS		PSWQ		PCL-C	
				M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Community	Male	40-59	17	42.76	7.65	52.29	11.80	6.58	5.06	43.64	30.37	8.94	2.16	7.00	6.28	36.05	12.02	22.41	4.66
		60-79	7	44.00	10.44	48.57	8.88	7.00	7.02	36.57	34.81	11.05	4.17	5.71	8.11	31.00	5.35	26.14	7.79
		80+	4	45.50	6.95	49.25	5.50	3.50	1.73	45.75	36.25	3.59	1.79	4.75	5.90	36.00	7.83	25.50	5.19
	Female	25-39	4	53.50	11.47	62.25	13.27	21.25	23.78	67.25	52.06	11.50	5.75	11.25	8.38	44.50	15.32	34.00	18.27
		40-59	26	43.57	7.88	56.11	14.69	6.34	6.43	36.65	26.40	16.93	3.32	9.80	9.10	42.25	13.83	26.42	9.17
		60-79	5	41.20	5.58	47.80	9.73	5.00	4.79	37.8	17.54	8.98	4.01	6.40	6.65	33.40	3.20	22.00	4.52
		80+	2	39.00	2.82	51.00	4.24	8.00	4.24	19.00	18.38	27.57	19.5	0.50	0.70	30.50	3.53	23.00	7.07
Anxiety	Male	18-24	1	62.00	-	82.00	-	17.00	-	70.00	-	-	-	25.00	-	51.00	-	54.00	-
		25-39	1	42.00	-	77.00	-	21.00	-	68.00	-	-	-	15.00	-	70.00	-	44.00	-
		40-59	2	50.00	4.24	93.00	32.52	18.50	9.19	66.50	7.77	22.62	16.00	18.00	14.14	56.50	4.94	51.50	26.16
	Female	18-24	1	54.00	-	72.00	-	9.00	-	40.00	-	-	-	4.00	-	66.00	-	42.00	-
		25-39	4	59.25	40.57	75.25	56.62	19.25	16.76	61.75	42.80	28.98	14.49	12.75	12.68	65.50	14.47	41.75	28.22
		40-59	1	43.00	-	129.00	-	56.00	-	132.00	-	-	-	23.00	-	70.00	-	71.00	-
		60-79	1	67.00	-	105.00	-	18.00	-	81.00	-	-	-	27.00	-	55.00	-	31.00	-

Note. CES = Curious Experiences Survey, SODAS = Scale of Dissociative Activities, BAI = Beck Anxiety Inventory, ASI-R = Anxiety Sensitivity Index, FQ = Fear Questionnaire, SADS = Social Avoidance and Distress Scale, PSWQ = Penn State Worry Questionnaire, PCL-C = PTSD Checklist.
N varies less than group totals as a function of missing data.

3.5 Covariation Among Measures of Anxiety

To examine the degree of relationship between scores on each measure of anxiety and on measures of trauma, total scores from each measure were correlated. Pearson's r correlations were calculated for the entire sample, and separately for each group (see Tables 5 – 7). Guidelines recommended by Davis (1971; cited in Matthey, 1998) for determining strength of association between variables were followed⁶.

Overall, all anxiety measures were moderately to strongly correlated with each other. Only the PCL-C was significantly correlated with degree of trauma exposure ($r = .23$), although all anxiety measures were correlated with trauma intensity (r 's range from .22 to .47). These correlation coefficients suggest that increased perceived intensity of trauma is not only associated with increased non-specific symptoms of anxiety and symptoms of posttraumatic stress, but also with symptoms of social anxiety, panic and worry. Of note is that many of the correlations in the anxiety group were not significant, probably as a function of the small sample size (see Table 7).

Table 5.
Intercorrelations among Measures of Anxiety and Trauma for the Combined Sample

Scale	BAI	ASI-R	FQ	SADS	PSWQ	PCL	TEQ-TE	TEQ-TI
BAI	-	.69***	.67***	.53***	.56***	.78***	.05 ns	.31**
ASI-R	.69***	-	.54***	.44***	.53***	.67***	.13 ns	.22*
FQ	.67***	.54***	-	.63***	.63***	.63***	-.06 ns	.24*
SADS	.53***	.44***	.63***	-	.69***	.61***	-.07 ns	.22*
PSWQ	.56***	.53***	.54***	.69***	-	.67***	.00 ns	.32**
PCL-C	.78***	.67***	.63***	.61***	.67***	-	.23*	.47***
TEQ - TE	.05 ns	.13 ns	-.06 ns	-.07 ns	.00 ns	.23*	-	.48***
TEQ - TI	.31**	.22*	.24*	.22*	.32**	.47***	.48***	-

Note. BAI = Beck Anxiety Inventory, ASI-R = Anxiety Sensitivity Index, FQ = Fear Questionnaire, SADS = Social Avoidance and Distress Scale, PSWQ = Penn State Worry Questionnaire, PCL-C = PTSD Checklist, TEQ-TE = Traumatic Events Questionnaire - Trauma Exposure, TEQ-TI = Traumatic Events Questionnaire – Trauma Intensity. N 's per correlational analysis vary between 89 to 94 for the combined sample
* $p < .05$, ** $p < .01$, *** $p < .001$

⁶ These rules are similar to Cohen's (1977) guidelines and are as follows: $.01 < r < .09$ a negligible association, $.1 < r < .29$ a low association, $.3 < r < .49$ a moderate association, $.5 < r < .69$ a substantial association, $r = .70+$ a very strong association.

Table 6.
Intercorrelations among Measures of Anxiety and Trauma for the Community Sample

Scale	BAI	ASI-R	FQ	SADS	PSWQ	PCL-C	TEQ-TE	TEQ-TI
BAI	-	.54***	.35**	.32**	.30**	.68***	-.10 ns	-.05 ns
ASI-R	.54***	-	.32**	.27*	.34**	.56***	.05 ns	.02 ns
FQ	.35**	.32**	-	.64***	.58***	.45***	-.21 ns	.00 ns
SADS	.32**	.27*	.64***	-	.69***	.39***	-.21 ns	-.03 ns
PSWQ	.30**	.34**	.58***	.69***	-	.52***	-.14 ns	.13 ns
PCL-C	.68***	.56***	.45***	.39***	.52***	-	.08 ns	.14 ns
TEQ - TE	-.10 ns	.05 ns	-.21 ns	-.21 ns	-.14 ns	.08 ns	-	.43***
TEQ - TI	-.05 ns	.02 ns	.00 ns	-.03 ns	.13 ns	.14 ns	.43***	-

Note. BAI = Beck Anxiety Inventory, ASI-R = Anxiety Sensitivity Index, FQ = Fear Questionnaire, SADS = Social Avoidance and Distress Scale, PSWQ = Penn State Worry Questionnaire, PCL-C = PTSD Checklist, TEQ-TE = Traumatic Events Questionnaire - Trauma Exposure, TEQ-TI = Traumatic Events Questionnaire – Trauma Intensity. *N*'s per correlational analysis vary between 70 to 74 for the community sample.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 7.
Intercorrelations among Measures of Anxiety and Trauma for the Anxiety Sample

Scale	BAI	ASI-R	FQ	SADS	PSWQ	PCL-C	TEQ-TE	TEQ-TI
BAI	-	.85***	.78***	.43 ns	.45 ^a	.62**	.34 ns	.35 ns
ASI-R	.85***	-	.71***	.41 ns	.56**	.73***	.44 ns	.23 ns
FQ	.78***	.71***	-	.32 ns	.30 ns	.50*	.26 ns	.15 ns
SADS	.43 ^a	.41 ns	.32 ns	-	.15 ns	.56**	.21 ns	.19 ns
PSWQ	.45 ns	.56**	.30 ns	.15 ns	-	.34 ns	.44 ns	.01 ns
PCL-C	.62**	.73***	.50**	.56**	.34 ns	-	.62**	.57**
TEQ - TE	.34 ns	.44 ns	.26 ns	.21 ns	.44 ns	.62**	-	.65**
TEQ - TI	.35 ns	.23 ns	.15 ns	.19 ns	.01 ns	.57**	.65**	-

Note. BAI = Beck Anxiety Inventory, ASI-R = Anxiety Sensitivity Index, FQ = Fear Questionnaire, SADS = Social Avoidance and Distress Scale, PSWQ = Penn State Worry Questionnaire, PCL-C = PTSD Checklist, TEQ-TE = Traumatic Events Questionnaire - Trauma Exposure, TEQ-TI = Traumatic Events Questionnaire – Trauma Intensity. *N*'s per correlational analysis vary between 16 to 20 for the anxiety sample.

^a approached significance at $p = .054$

* $p < .05$, ** $p < .01$, *** $p < .001$

3.6 Covariation Among Measures of Anxiety and Dissociation

The degree of relationship between various forms of anxiety and dissociation was also examined by means of Pearson's correlations. These intercorrelations are displayed in Table 8.

Table 8.

Intercorrelations between Measures of Anxiety and Measures of Dissociation as a Function of Group Membership

Scale	Combined Sample		Community Sample		Anxiety Sample	
	SODAS	CES	SODAS	CES	SODAS	CES
BAI	.75***	.58***	.50***	.55***	.71**	.45 ^a
ASI-R	.61***	.50***	.51***	.51***	.70**	.43 ^b
FQ	.64***	.51***	.37***	.23*	.62**	.56**
SADS	.62***	.43***	.44***	.29**	.56**	.36ns
PSWQ	.60***	.34***	.57***	.27**	.12ns	.00ns
PCL-C	.81***	.63***	.60***	.57***	.73***	.53**
TEQ - TE	.07ns	.19ns	-.05ns	.11ns	.24ns	.35ns
TEQ - TI	.46***	.36***	.16ns	.09ns	.49*	.44ns

Note. BAI = Beck Anxiety Inventory, ASI-R = Anxiety Sensitivity Index – Revised (Total Score), FQ = Fear Questionnaire (Total Score), SADS = Social Avoidance and Distress Scale, PSWQ = Penn State Worry Questionnaire, PCL-C = PTSD Checklist, TEQ-TE = Traumatic Events Questionnaire – Trauma Exposure Score, TEQ-TI = Traumatic Events Questionnaire – Trauma Intensity score.

N's per correlational analysis vary between 89 to 94 for the entire sample, 70 to 74 for the community sample, and between 16 to 20 for the anxiety sample.

^a Approached significance $p = .052$, ^b likewise approached at $p = .059$

* $p < .05$, ** $p < .01$, *** $p < .001$

Strong correlations emerged between each measure of anxiety and total scores on the SODAS, while moderate and significant relationships are evident between these and total CES scores. This suggests that increased symptoms of anxiety, in particular of social phobia, panic, posttraumatic stress, and generalised anxiety, are associated with increased levels of dissociation. Higher levels of anxiety sensitivity are also related to greater reported levels of dissociation. Trauma intensity, but not trauma exposure, is also related to dissociation.

To investigate which subscales of the FQ and ASI-R were contributing most to the positive correlation with dissociative scores, subscale scores were derived and correlations performed (see Table 9). On the ASI-R, *Fear of Cognitive Dyscontrol* was most strongly associated with CES and SODAS scores. On the FQ, *Agoraphobia* and the general measure of *Anxiety / Depression* were most strongly associated with dissociative scores.

Table 9.

Intercorrelations between Anxiety Sensitivity Index (Revised) Subscale Scores, Fear Questionnaire Subscale Scores, and Measures of Dissociation as a Function of Group Membership

Scale Subscale	Combined Sample		Community Sample		Anxiety Sample	
	SODAS	CES	SODAS	CES	SODAS	CES
ASI-R Total	.61***	.50***	.51***	.51***	.70**	.43 ^a
FCV	.51***	.45***	.47***	.52***	.57**	.36 ns
FRS	.63***	.55***	.44***	.48***	.62*	.49 *
FPOAR	.45***	.30**	.25*	.23*	.48*	.21 ns
FCD	.70***	.57***	.38***	.48***	.81**	.52*
FQ Total	.64***	.51***	.37***	.23*	.62**	.56**
AG	.64***	.61***	.35**	.31**	.59**	.66**
BI	.37***	.32**	.25*	.18 ns	.36 ns	.37 ns
SPL	.57***	.36***	.35**	.18 ns	.52*	.32 ns
AD	.74***	.53***	.57***	.41***	.70***	.46*

Note. Anxiety Sensitivity Checklist: ASI-R Total = Anxiety Sensitivity Index – Revised (Total Score), FCV = Fear of cardiovascular symptoms, FRS = Fear of respiratory symptoms, FPOAR = Fear of publicly observable anxiety reactions, and FCD = Fear of cognitive discontrol. *Fear Questionnaire:* FQ Total = Fear Questionnaire (Total Score), AG = Agoraphobia, BI = Blood / Injury, SPL = Social Phobia, and AD = Anxiety / Depression.

N's per correlational analysis vary between 89 to 94 for the entire sample, 70 to 74 for the community sample, and between 16 to 20 for the anxiety sample.

^a Approached significance at $p = .059$

* $p < .05$, ** $p < .01$, *** $p < .001$

3.7 Patterns of Dissociation

The nature of dissociative experiences in both the community and anxiety groups was examined by means of CES subscale (factor) scores (i.e., Absorption, Depersonalisation / Derealisation, Amnesia). Means and standard deviations for both groups are presented in Table 10.

The anxiety group reported significantly higher average scores on both the *Depersonalisation / Derealisation* subscale [$t(92) = -4.99, p < .001$] and *Absorption* subscales [$t(92) = -2.58, p = 0.01$]. Both groups reported similar levels of dissociative amnesic experiences [$t(92) = -1.64, p = .10$].

Table 10.
Comparison between Community and Anxiety Samples on Factors of the Curious Experiences Survey (CES)

CES Factor	Community Group			Anxiety Group			p
	M	SD	Range	M	SD	Range	
Depersonalisation / Derealisation	9.31	2.94	8-22	14.95	8.00	8-36	***
Absorption	14.31	3.72	8-26	17.35	7.23	8-34	**
Amnesia	6.30	1.75	5-17	7.25	3.74	5-20	ns
Total Score	44.25	8.39	32-71	57.65	24.44	32-120	***

* $p < .05$ ** $p < .01$, *** $p < .001$ (two-tailed)

Scores on each subscale were converted to z-scores for purposes of comparison. As illustrated in Figure 11, the anxiety group scored close to two standard deviations above the community sample on the Depersonalisation / Derealisation subscale, close to one standard deviation above the community sample on the Absorption subscale, and over half a standard deviation above on the Amnesia subscale.

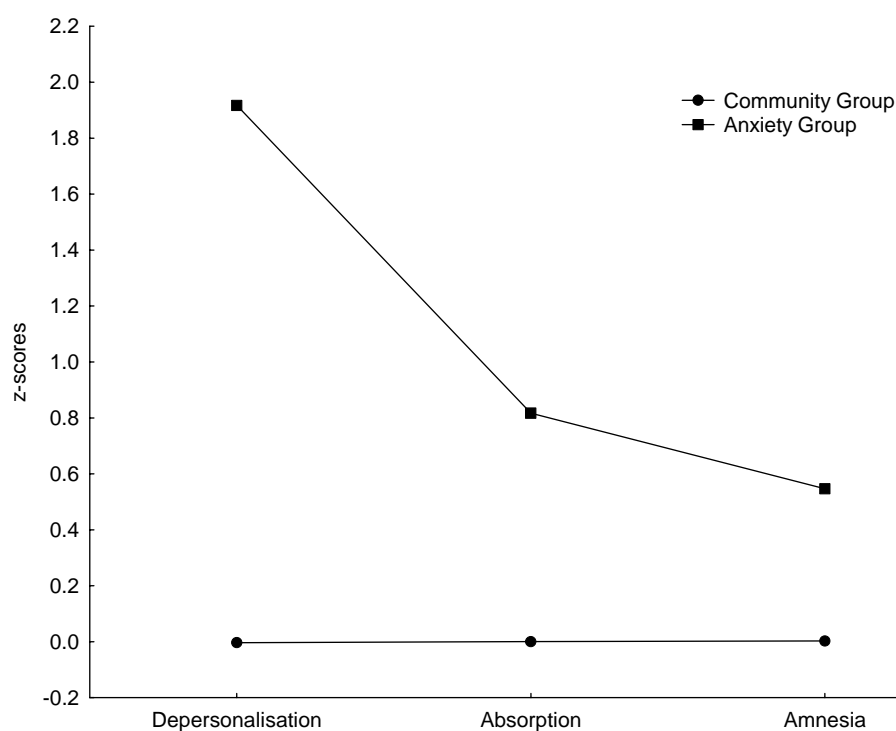


Figure 11. Comparison between community and anxiety samples on factors derived from the Curious Experiences Survey (CES)

Frequency of response to items on the Depersonalisation/Derealisation subscale (see Appendix T) and the Absorption subscale was examined (see Appendix U) for both groups. Overall, proportionally more people in the anxiety group indicated that they had experienced each form of dissociation than respondents in the community sample. For example, on item 13 (see Appendix T) “*Had the experience of feeling that my body did not belong to me*” almost 90% of the community sample reported that they had never experienced this, while over 50% of the anxiety sample endorsed this experience (to varying degree).

The degree of relationship between various forms of anxiety, trauma and dissociation was also examined by means of Pearson’s correlations. These intercorrelations are displayed in Table 11. Moderate to strong associations were found between measures of anxiety and the *Absorption and Depersonalisation / Derealisation* subscales.

Table 11.
Intercorrelations between Anxiety Scales and Curious Experiences Survey Dissociative Factors

Scale	Combined Sample			Community Sample			Anxiety Sample		
	ABS	D/D	AMN	ABS	D/D	AMN	ABS	D/D	AMN
BAI	.48***	.54***	.25**	.52***	.31**	.16 ns	.33ns	.45 ^a	.19 ns
ASI-R	.43***	.46***	.15 ns	.41***	.33**	.09 ns	.32 ns	.44 ^a	.10 ns
FQ	.41***	.48***	.16 ns	.25*	.03 ns	.12 ns	.44*	.60*	.05 ns
SADS	.37***	.41***	.31**	.21 ns	.23*	.28*	.43 ^b	.23 ns	.28 ns
PSWQ	.30*	.34***	.12 ns	.34**	.08 ns	.11 ns	-.09 ns	.06 ns	-.16 ns
PCL	.51***	.58***	.32**	.57***	.28*	.22 ns	.36 ns	.52*	.35 ns
TEQ – TE	.08 ns	.23*	.02 ns	.05 ns	.19ns	-.10 ns	.15 ns	.33ns	.43 ns
TEQ – TI	.25**	.39***	.18 ns	.13 ns	.00 ns	-.08 ns	.22 ns	.51*	.42 ns

Note: ABS = Absorption Factor, D/D = Depersonalisation / Derealisation Factor, AMN = Amnesia Factor, BAI = Beck Anxiety Inventory, ASI-R = Anxiety Sensitivity Index – Revised (Total Score), FQ = Fear Questionnaire (Total Score), SADS = Social Avoidance and Distress Scale, PSWQ = Penn State Worry Questionnaire, PCL-C = PTSD Checklist, TEQ-TE = Traumatic Events Questionnaire – Trauma Exposure Score, TEQ-TI = Traumatic Events Questionnaire – Trauma Intensity score.

* $p < .05$, ** $p < .01$, *** $p < .001$

^a Approached significance $p = .051$, ^b likewise approached at $p = .059$

N’s per correlational analysis vary between 89 to 94 for the entire sample, 70 to 74 for the community sample, and between 16 to 20 for the anxiety sample.

Overall, trauma intensity was moderately associated with symptoms of depersonalisation/derealisation. A low association was found with *Absorption*, but no association with *Amnesia*. When the two groups were divided, the association between trauma intensity and depersonalisation / derealisation held with the anxiety group, but not with the community group.

To investigate which subscales of the FQ and ASI-R were contributing most to the positive correlation with CES subscales, correlations between FQ, ASI-R and CES subscales were calculated (see Table 12).

Table 12.

Intercorrelations between Anxiety Sensitivity Index (Revised) Subscale Scores, Fear Questionnaire Subscale Scores, and Curious Experiences Survey Dissociative Factors

Scale	Combined Sample			Community Sample			Anxiety Sample		
	ABS	D/D	AMN	ABS	D/D	AMN	ABS	D/D	AMN
ASI-R Total	.43***	.46***	.15 ns	.41***	.33**	.09 ns	.32 ns	.44 ^a	.10 ns
FCV	.39***	.39***	.15 ns	.47***	.34**	.09 ns	.18 ns	.36 ns	.19 ns
FRS	.44***	.54***	.19 ns	.41***	.30**	.09 ns	.35 ns	.57 **	.35 ns
FPOAR	.21*	.32**	.01 ns	.13 ns	.19 ns	.04 ns	.15 ns	.24 ns	.15 ns
FCD	.47***	.57***	.17 ns	.36***	.40***	.03 ns	.48*	.52**	.48 *
FQ Total	.41***	.48***	.16 ns	.25*	.03 ns	.12 ns	.44*	.60*	.05 ns
AG	.47***	.58***	.22*	.29*	.10 ns	.17 ns	.52*	.68***	.16 ns
BI	.26*	.34***	.07 ns	.23*	.09 ns	.11 ns	.19 ns	.50*	-.06 ns
SPL	.32**	.30**	.10 ns	.18 ns	-.03 ns	.07 ns	.32 ns	.29 ns	-.01 ns
AD	.49***	.48***	.26*	.39***	.21 ns	.21 ns	.46*	.46*	.18 ns

Note: ABS = Absorption Factor, D/D = Depersonalisation / Derealisation Factor, AMN = Amnesia Factor
Anxiety Sensitivity Checklist: ASI-R Total = Anxiety Sensitivity Index – Revised (Total Score), FCV = Fear of cardiovascular symptoms, FRS = Fear of respiratory symptoms, FPOAR = Fear of publicly observable anxiety reactions, and FCD = Fear of cognitive discontrol. *Fear Questionnaire*: FQ Total = Fear Questionnaire (Total Score), AG = Agoraphobia, BI = Blood / Injury, SPL = Social Phobia, and AD = Anxiety / Depression.

N's per correlational analysis vary between 89 to 94 for the entire sample, 70 to 74 for the community sample, and between 16 to 20 for the anxiety sample.

* $p < .05$, ** $p < .01$, *** $p < .001$

The outcome was similar to that for CES total score. On the ASI-R, *Fear of Cognitive Dyscontrol* and *Fear of Respiratory Symptoms* were most strongly associated with

Depersonalisation/Derealisation and *Absorption* scores but were not associated with *Amnesia* scores. However, *Fear of Cognitive Dyscontrol* emerged as significantly related to *Absorption* among correlations calculated for the anxiety group alone, while the association between *Absorption* and *Fear of Respiratory Symptoms* failed to reach significance in that group. On the FQ, *Agoraphobia* and the general measure of *Anxiety / Depression* were most strongly associated with CES subscale scores.

3.8 Factor Analyses

To examine higher level relations among and between measures, total scores from the SODAS, BAI, SADS, PSWQ and PCL-C, along with subscale scores from the CES, ASI-R, and FQ were subjected to a principal components analysis (PCA). A residual score for the CES, comprised of the sum of items not included in the subscales, was also included. Assessment of the suitability of the data for PCA was conducted, prior to the analysis. Inspection of the correlation matrix revealed that all coefficients were above .3; the Kaiser-Meyer-Olkin (measure of sampling adequacy) value was .90 exceeding the recommended value of .6; the Bartlett's Test of Sphericity was statistically significant, supporting the factorability of the correlation matrix.

PCA revealed the presence of three components with eigenvalues exceeding 1, explaining 54.33%, 11.15%, and 7.91% of the variance respectively (cumulative variance accounted for = 73.50%). Inspection of the scree plot supported this solution (see Appendix V), with a break after the third component. All three factors were thus retained in further analyses. To assist in interpretation of these factors, Varimax rotation was performed. This rotation revealed a mixed structure (presented in Table 13), however, most variables substantially loaded on one of the three components. Some overlap was, nonetheless, evident.

Table 13.

Varimax Rotation of Three Factor Solution for Anxiety, Anxiety Sensitivity and Dissociation Scores

	Component 1 Expressed Anxiety	Component 2 Dissociation	Component 3 Anxiety Sensitivity
<i>Scales</i>			
CES Residual		.843	.326
CES Depersonalisation		.758	.323
CES Absorption		.837	
CES Amnesia		.777	
SODAS	.541	.648	.381
ASI – FCV			.882
ASI – FRS			.847
ASI – FPOAR	.356		.767
ASI – FCD	.385	.304	.756
BAI	.534	.370	.560
FQ – AG	.625	.423	
FQ – BI	.410		.461
FQ – SPL	.854		
FQ – AD	.678	.322	.376
SADS	.807		
PSWQ	.771		.316
PCL – C	.583	.441	.471
% of variance explained	25.82%	23.10%	24.48%

Note: Only loadings above .3 are displayed

To further aid interpretation, an Oblimin rotation was also performed (see Table 14). This resulted in a clearer pattern matrix, which was consistent with the theoretical distinction of dissociation, anxiety sensitivity, and expressed anxiety. Expressed Anxiety scores loaded strongly on Component One, Dissociation scores loaded strongly on Component Two, and Anxiety Sensitivity scores loaded strongly on Component Three.

Scores from the scales presented in the PCA pattern matrix as significantly loading above .4 on the factor interpreted as *Dissociation* were then converted to *z* scores. The *z* scores were then summed to create a single Dissociation Composite Score⁷. ASI-R scores, which loaded on the Anxiety Sensitivity factor, and scores from the other anxiety measures

⁷ Advice given in personal communication with Professor Garth Fletcher, January 21st 2007

which loaded on the Expressed Anxiety factor, were then entered in a series of multiple regressions predicting the Dissociation Composite Score.

Table 14.
Oblimin Rotation of Three Factor Solution for Anxiety, Anxiety Sensitivity and Dissociation Scores

<i>Scales</i>	Component 1 Expressed Anxiety	Component 2 Dissociation	Component 3 Anxiety Sensitivity
CES Residual		.818	
CES Depersonalisation		.725	
CES Absorption		.834	
CES Amnesia		.834	
SODAS	.424	.541	
ASI – FCV			-.965
ASI – FRS			-.880
ASI – FPOAR			-.780
ASI – FCD			-.724
BAI	.405		-.442
FQ – AG	.601	.304	
FQ – BI	.338		-.399
FQ – SPL	.939		
FQ – AD	.640		
SADS	.878		
PSWQ	.805		
PCL – C	.479		-.315

Note: Only loadings above .3 are displayed.
Percentage variance cannot be obtained with Oblimin rotation.

3.9 Prediction of Dissociation

A series of hierarchical multiple regression analyses were conducted to examine the unique contribution of anxiety sensitivity and other anxiety disorder symptoms to dissociation scores. Gender, age and group designation were controlled for by forcing these variables into step one of each regression analysis. With the use of a $p < .001$ criterion for Mahalanobis distance, one outlier was deleted. Pairwise deletion of missing data was utilised.

In the first analysis, the relative contribution of each of the anxiety disorder symptoms was assessed. The composite dissociation score was entered as the dependent variable. In step one, age and gender scores were entered, followed by scores from the BAI, FQ-AG, FQ-

BI, FQ-SPL, FQ-AD, SADS, PSWQ, and PCL in step two. Table 15 summarises the result of this analysis. R was significantly different from zero at the end of both steps.

Table 15.
Summary of Hierarchical Regression of Demographic and Anxiety Variables on Dissociation

<i>Variables</i>		<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
<i>Step 1</i>						
	Group	3.65	1.41	.29	2.58	.01
	Gender	.79	1.03	.08	.779	.439
	Age	-.02	.03	-.06	-.48	.634
		$R = .344, R^2 = .118, \text{Adjusted } R^2 = .085, R^2 \text{ Change} = .118$				
<i>Step 2</i>						
	Group	-.32	1.23	-.26	-2.58	.01
	Gender	-1.90	.72	-.02	-.26	.79
	Age	-.02	.02	-.08	-.93	.36
	BAI	.06	.05	.16	1.25	.21
	FQ-AG	.31	.07	.50	4.57	.00
	FQ-BI	.01	.07	.02	.17	.86
	FQ-SPL	-.16	.07	-.29	-2.47	.02
	FQ-AD	-.03	.07	-.04	-.39	.698
	SADS	.10	.05	.19	1.84	.07
	PSWQ	-.021	.04	-.07	-.59	.56
	PCL	.169	.04	.51	3.42	.001
		$R = .812, R^2 = .659, \text{Adjusted } R^2 = .606, R^2 \text{ Change} = .541$				

At step one, 11.8% of the variance was accounted for, though only group designation (i.e., anxiety vs. community group) was significant, consistent with community status being associated with lower dissociation scores. At step two, 65.9% of the variance was accounted for (R^2 change = .541). Symptoms of agoraphobia (FQ-AG), social phobia (FQ-SPL, SADS) and posttraumatic stress (PCL) scores appeared to contribute most to the prediction of dissociation, while symptoms of generalised anxiety (PSWQ) did not. Consequently, those four variables were retained in later analyses.

In the second analysis, Anxiety Sensitivity subscales were entered in the second step, while the previous significant anxiety measures were entered in the third step. R was

significantly different from zero at all steps. At the end of step three, 68.3% of the variance was accounted for. Table 16 summarises the result of this analysis.

Table 16.
Summary of Hierarchical Regression of Demographic, Anxiety Sensitivity, and Anxiety Variables on Dissociation

	<i>Variables</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
<i>Step 1</i>						
	Group	3.64	1.42	.29	2.56	.012
	Gender	.799	1.03	.08	.77	.441
	Age	-.017	.03	-.06	-.47	.636
$R = .344, R^2 = .118, \text{Adjusted } R^2 = .084, R^2 \text{ Change} = .118$						
<i>Step 2</i>						
	Group	-.12	1.26	-.01	-.10	.920
	Gender	.11	.82	.01	.14	.891
	Age	-.05	.03	-.17	-1.82	.072
	ASI-FRS	.13	.06	.39	2.19	.032
	ASI-FPOAR	-.17	.09	-.26	-1.94	.056
	ASI-FCV	-.02	.07	-.05	-.31	.757
	ASI-FCD	.42	.12	.54	3.39	.001
$R = .692, R^2 = .478, \text{Adjusted } R^2 = .429, R^2 \text{ Change} = .360$						
<i>Step 3</i>						
	Group	-3.49	1.16	-.28	-3.01	.004
	Gender	-.26	.67	-.03	-.38	.704
	Age	-.03	.02	-.09	-1.21	.230
	ASI-FRS	.10	.05	.29	1.98	.052
	ASI-FPOAR	-.01	.08	-.02	-.14	.888
	ASI-FCV	-.05	.06	-.11	-.82	.412
	ASI-FCD	.06	.11	.07	.51	.611
	FQ-AG	.31	.07	.49	4.41	.000
	FQ-SPL	-.16	.06	-.28	-2.50	.015
	SADS	.08	.05	.16	1.59	.117
	PCL	.14	.04	.43	3.33	.001
$R = .826, R^2 = .683, \text{Adjusted } R^2 = .633, R^2 \text{ Change} = .204$						

Anxiety Sensitivity variables collectively accounted for 47.8% of the variance, with *Fear of Respiratory Symptoms* and *Fear of Cognitive Dyscontrol* emerged as significant. These were retained for the final model (see Table 17). The remaining anxiety measures accounted for an additional 20.4% of the variance.

The final model was comprised of all significant variables from the second analysis and accounted for 66.7% of the variance.

Table 17.
Summary of Final Model of Demographic, Anxiety Sensitivity, and Anxiety Variables on Dissociation

	<i>Variables</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
<i>Step 1</i>						
	Group	3.64	1.42	.29	2.56	.012
	Gender	.79	1.03	.08	.77	.441
	Age	-.02	.03	-.06	-.47	.636
$R = .344, R^2 = .118, \text{Adjusted } R^2 = .084, R^2 \text{ Change} = .118$						
<i>Step 2</i>						
	Group	-.05	1.23	-.00	-.04	.968
	Gender	.12	.82	.01	.15	.880
	Age	-.05	.03	-.17	-1.84	.070
	ASI-FRS	.12	.05	.36	2.59	.011
	ASI-FPOAR	-.17	.09	-.26	-1.95	.054
	ASI-FCD	.41	.12	.53	3.46	.001
$R = .691, R^2 = .478, \text{Adjusted } R^2 = .436, R^2 \text{ Change} = .360$						
<i>Step 3</i>						
	Group	-3.09	1.13	-.25	-2.72	.008
	Gender	-.22	.68	-.02	-3.29	.743
	Age	-.03	.02	-.11	-1.35	.181
	ASI-FRS	.06	.04	.18	1.46	.148
	ASI-FPOAR	-.01	.08	-.01	-.06	.948
	ASI-FCD	.08	.11	.10	.72	.473
	FQ-AG	.30	.07	.49	4.33	.000
	FQ-SPL	-.12	.06	-.21	-1.97	.052
	PCL	.15	.04	.46	3.61	.001
$R = .817, R^2 = .667, \text{Adjusted } R^2 = .626, R^2 \text{ Change} = .189$						

3.10 Prediction of Posttraumatic Stress

Because of the theoretical and clinical links often noted between dissociation and posttraumatic stress, the prediction of posttraumatic stress scores was examined in a series of multiple regression analyses. Since there was no consistent difference in trauma exposure between groups, the grouping variable was not included in these analyses.

Hierarchical regression analyses were conducted to examine the unique contribution of trauma exposure and intensity, anxiety sensitivity and other anxiety disorder symptoms to posttraumatic stress scores. Gender and age were controlled for by forcing these variables into step one of each regression analysis. With the use of a $p < .001$ criterion for Mahalanobis distance, no outliers were identified. Pairwise deletion of missing data was utilised.

In the first analysis, the relative contribution of trauma intensity and trauma exposure was assessed. PCL-C score was entered as the dependent variable. Age and gender were entered at step one followed by TEQ-TI and TEQ-TE scores at step two. Table 18 summarises the result of this analysis. R was significantly different from zero at the end of both steps. At step one, age was a significant predictor of PCL-C scores. At step two, only trauma exposure (TEQ-TE) not trauma intensity (TEQ-TI) emerged as a significant predictor. The total model accounted for 23.2% of the variance.

Table 18.
Summary of Hierarchical Regression of Demographic and Trauma Variables on PTSD

	<i>Variables</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
<i>Step 1</i>	Gender	1.150	2.778	.043	.414	.680
	Age	-.223	.085	-.276	-2.630	.010
	$R = .284, R^2 = .081, \text{Adjusted } R^2 = .059, R^2 \text{ Change} = .081$					
<i>Step 2</i>	Gender	1.453	2.573	.055	.565	.574
	Age	-.162	.080	-.201	-2.032	.045
	TEQ-TI	-.028	.038	-.075	-.735	.464
	TEQ-TE	.118	.030	.412	3.996	.000
	$R = .481, R^2 = .232, \text{Adjusted } R^2 = .195, R^2 \text{ Change} = .151$					

In the second analysis, Anxiety Sensitivity subscales were entered in the second step, while *Trauma Intensity* and *Trauma Exposure* were entered in the third step. R was

significantly different from zero at all steps. At the end of step three, 59.5% of the variance was accounted for. Table 19 summarises the result of this analysis.

Anxiety Sensitivity variables collectively accounted for 55.1% of the variance, with *Fear of Respiratory Symptoms* and *Fear of Cognitive Dyscontrol* again emerging as significant. Consequently, those two variables were retained in later analyses. *Trauma Intensity* and *Trauma Exposure* accounted for an additional 4.4% of the variance, though only trauma exposure significantly contributed to the prediction.

Table 19.
Summary of Hierarchical Regression of Demographic, Trauma, and Anxiety Sensitivity on PTSD

	<i>Variables</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
<i>Step 1</i>	Gender	1.150	2.795	.043	.411	.682
	Age	-.223	.085	-.276	-2.614	.011
	$R = .284, R^2 = .081, \text{Adjusted } R^2 = .059, R^2 \text{ Change} = .081$					
<i>Step 2</i>	Gender	.468	2.006	.018	.233	.816
	Age	-.212	.063	-.263	-3.365	.001
	ASI-FRS	.338	.147	.349	2.292	.025
	ASI-FPOAR	-.304	.203	-.166	-1.495	.139
	ASI-FCV	.110	.169	.093	.651	.517
	ASI-FCD	.944	.304	.413	3.101	.003
	$R = .742, R^2 = .551, \text{Adjusted } R^2 = .517, R^2 \text{ Change} = .470$					
<i>Step 3</i>	Gender	.763	1.935	.029	.394	.694
	Age	-.170	.063	-.210	-2.714	.008
	ASI-FRS	.200	.149	.207	1.340	.184
	ASI-FPOAR	-.136	.204	-.074	-.669	.506
	ASI-FCV	.149	.165	.126	.902	.370
	ASI-FCD	.900	.300	.394	3.005	.004
	TEQ-TI	-.019	.030	-.050	-.629	.531
	TEQ-TE	.071	.025	.247	2.881	.005
$R = .771, R^2 = .595, \text{Adjusted } R^2 = .553, R^2 \text{ Change} = .044$						

In the third analysis, the relative contribution of each of the anxiety disorder symptoms was assessed (see Table 20). Again, R was significantly different from zero at all

steps. At step four, general symptoms of anxiety (BAI, FQ-AD), and symptoms of generalised anxiety (worry as assessed by the PSWQ) emerged as significant predictors. These variables, along with *Trauma Exposure*, *Fear of Respiratory Symptoms* and *Fear of Cognitive Dyscontrol* were retained in the final model (see Table 21) which accounted for 87.6% of the variance in PCL-C scores.

Table 20.
Summary of Hierarchical Regression of Demographic, Trauma, Anxiety Sensitivity, and Anxiety Variables Predicting PTSD

		<i>B</i>	SE	β	<i>t</i>	<i>p</i>
<i>Variables</i>						
<i>Step 1</i>						
	Gender	1.150	2.864	.043	.401	.689
	Age	-.223	.087	-.276	-2.551	.013
		$R = .284, R^2 = .081, \text{Adjusted } R^2 = ., R^2 \text{ Change} = .058$				
<i>Step 2</i>						
	Gender	.498	2.063	.019	.241	.810
	Age	-.189	.063	-.234	-3.006	.004
	ASI-FRS	.360	.117	.373	3.083	.003
	ASI-FCD	.795	.276	.348	2.875	.005
		$R = .733, R^2 = .537, \text{Adjusted } R^2 = .513, R^2 \text{ Change} = .456$				
<i>Step 3</i>						
	Gender	.743	1.967	.028	.378	.707
	Age	-.157	.061	-.194	-2.571	.012
	ASI-FRS	.281	.114	.290	2.455	.016
	ASI-FCD	.841	.264	.368	3.188	.002
	TEQ-TE	.067	.022	.234	2.993	.004
		$R = .765, R^2 = .585, \text{Adjusted } R^2 = .558, R^2 \text{ Change} = .048$				
<i>Step 4</i>						
	Gender	-.761	1.650	-.029	-.461	.646
	Age	-.012	.056	-.015	-.214	.831
	ASI-FRS	.182	.101	.188	1.809	.075
	ASI-FCD	-.043	.253	-.019	-.170	.865
	TEQ-TE	.039	.020	.136	1.934	.057
	BAI	.415	.109	.367	3.809	.000
	FQ-AG	-.045	.185	-.022	-.241	.810
	FQ-BI	-.110	.168	-.049	-.658	.512
	FQ-SPL	-.001	.161	.000	-.004	.996
	FQ-AD	.464	.141	.299	3.284	.002
	SADS	.008	.136	.006	.061	.952
	PSWQ	.165	.078	.190	2.109	.038
		$R = .874, R^2 = .764, \text{Adjusted } R^2 = .724, R^2 \text{ Change} = .179$				

Table 21.

Summary of Final Model Including Demographic, Trauma, Anxiety Sensitivity, and Anxiety Variables predicting PTSD

	<i>Variables</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
<i>Step 1</i>						
	Gender	1.535	2.742	.062	.560	.577
	Age	-.216	.085	-.279	-2.526	.014
$R = .295, R^2 = .087, \text{Adjusted } R^2 = .063, R^2 \text{ Change} = .087$						
<i>Step 2</i>						
	Gender	-.121	1.805	-.005	-.067	.947
	Age	-.192	.056	-.248	-3.426	.001
	ASI-FRS	.461	.101	.524	4.558	.000
	ASI-FCD	.525	.244	.247	2.155	.034
$R = .786, R^2 = .618, \text{Adjusted } R^2 = .598, R^2 \text{ Change} = .531$						
<i>Step 3</i>						
	Gender	.302	1.658	.012	.182	.856
	Age	-.152	.052	-.197	-2.903	.005
	ASI-FRS	.382	.095	.434	4.023	.000
	ASI-FCD	.551	.224	.259	2.467	.016
	TEQ-TE	.070	.018	.273	3.902	.000
$R = .827, R^2 = .683, \text{Adjusted } R^2 = .662, R^2 \text{ Change} = .065$						
<i>Step 4</i>						
	Gender	-1.217	1.099	-.049	-1.108	.272
	Age	-.032	.037	-.041	-.861	.392
	ASI-FRS	.257	.062	.292	4.141	.000
	ASI-FCD	-.300	.165	-.141	-1.821	.073
	TEQ-TE	.041	.012	.157	3.400	.001
	BAI	.551	.072	.530	7.667	.000
	FQ-AD	.298	.092	.196	3.239	.002
	PSWQ	.091	.046	.113	1.971	.053
$R = .936, R^2 = .876, \text{Adjusted } R^2 = .862, R^2 \text{ Change} = .192$						

3.11 *The Effect of Drugs and Alcohol*

Finally, the effect of repeated use of illicit drugs and alcohol was examined by means of total scores on the TCUDS-II. This score is the sum of items pertaining to behaviours that indicate substance dependence or misuse, but is not specific to any drug. In the community sample, the mean score was .25 (range 0 – 4) with a median score of absolute zero. Only 11 people (15%) in this group scored above nil. Some 89% of respondents indicated that they did

not consume alcohol or drugs at all. Only 10% reporting drinking alcohol, with frequency varying from only a few times in the past 12 months, to daily use. One person reported using other stimulants.

In the anxiety sample, the mean score was 2.53 (range 0-11) with a median score of one. This difference between group means was statistically significant [$t(91) = -5.23, p < .001$]. Half of the sample (50%) scored above nil, while half reported no use of drugs or alcohol. Two reported drinking alcohol (one reporting frequency at only a few times per month, one reporting daily consumption), two reported use of marijuana, one the use of other stimulants, two the use of tranquilizers or sedatives, and two the use of hallucinogens.

The degree of relationship between various forms of TCUDS-II scores and dissociation scores were also examined by means of Pearson's correlations. TCUDS-II was moderately associated with CES total score ($r = .37, p < .001$) and with SODAS total score ($r = .48, p < .001$). When entered as a fourth step in hierarchical regression analysis predicting dissociation, TCUDS-II scores did not contribute to the final model described above (R^2 change = .001, $p = .71$).

CHAPTER FOUR

DISCUSSION

The present study was an exploration of dissociative experiences in a community sample of adults, in comparison with a sample of adults who were, at that time, diagnosed with at least one of several different anxiety disorders. The study was unique in that a number of expressions of anxiety were assessed simultaneously and their relationship to different forms of dissociation was explored. The influence of a possible mediating variable (i.e., anxiety sensitivity) in the relationship between trauma anxiety and dissociation was also considered.

It was hypothesised that, in comparison with the community sample, adults diagnosed with anxiety disorders would endorse more items on self-report questionnaires assessing various expressions of anxiety, and would also endorse greater frequency of dissociative experiences. It was also hypothesised that elevated levels of anxiety would be associated with elevated levels of dissociation, as would the occurrence of dissociative experiences that may be viewed as ‘pathological’ in nature. There were no *a priori* hypotheses about which expressions of anxiety would be most strongly related to dissociation, or about the magnitude of these associations.

This study also investigated the influence of anxiety sensitivity in the prediction of dissociation. It was hypothesised that anxiety sensitivity would be related to dissociation, and would increase the variance accounted for in models predicting dissociative experiences.

4.1 Overall Findings

The results of the present study supported the hypothesis that participants with diagnosed anxiety disorders would exhibit higher levels of dissociation than participants from the community. Mean scores on the CES and SODAS were significantly higher in the anxiety

sample than in the community sample, indicating a trend toward greater variety and frequency of dissociative experiences in anxious persons. This result is consistent with the finding of elevated DES scores in patients with anxiety disorders obtained by Bernstein and Putnam (1986). That SODAS scores appeared to be considerably higher than CES scores in both community and anxiety samples, suggests that the SODAS is (as intended by the authors) measuring more commonly occurring dissociative experiences or is in some other way a more sensitive measure than the CES. Further statistical evaluation of the validity and reliability of this measure on both community and clinical samples appears warranted.

Participants in the anxiety sample also exhibited significantly higher levels of depersonalisation / derealisation and absorption than participants from the community sample, though not significantly higher levels of amnesia. While absorption experiences are considered normal, and have been shown to be common in the general population (e.g., Roche & McConkey, 1990), depersonalisation / derealisation experiences may be considered inherently more pathological (Waller et al., 1996). Irrespective of the 'pathological' nature of absorption or depersonalisation / derealisation, however, increasing frequency of these experiences may be clinically significant with regard to impairment in daily functioning.

Elevated scores on measures of anxiety were moderately to strongly associated with elevated scores on measures of dissociation. Stronger associations were evident between dissociation and symptoms of posttraumatic stress, agoraphobia and social anxiety than with generalised anxiety. This pattern of results is consistent with numerous individual studies of separate anxiety disorders in relation to dissociation (Ball et al., 1997; Cassano et al., 1989; Michal et al., 2005; Muris, Merckelbach, & Peeters, 2003; van Ijzendoorn & Schuengel, 1996). This finding also supports Muris, Merckelbach & Peeters suggestion that dissociation is

not specific to anxiety expressed in posttraumatic stress but is generally associated with numerous expressions of anxiety.

The aforementioned anxiety measures were associated with depersonalisation / derealisation and absorption subscales of the CES, however, only symptoms of social phobia and posttraumatic stress were associated with symptoms relating to dissociative amnesia. That social phobia is related to amnesia is consistent with cognitive models of the generation and maintenance of social anxiety. These models (e.g., Rapee & Heimberg, 1997) suggest that individuals with social anxiety allocate excessive attentional resources to detecting social threat cues. In this state, the individuals ability to process information from their external environment is limited, which in turn limits the encoding of information (Turk, Heimberg, & Hope, 2001). Consistent with this line of reasoning, some research has demonstrated disrupted memory in individuals with social phobia (e.g., Hope, Heimberg, & Klein, 1990). Whether this experience could be described as dissociative amnesia *per se* could usefully be examined in future research.

The association between anxiety sensitivity and dissociation was also examined in the present study. Anxiety sensitivity is “the fear of anxiety-related sensations, which arises from the belief that these sensations have harmful somatic, psychological or social consequences” (Taylor, 1995, p.243). As expected, participants in the anxiety sample scored significantly higher on the Anxiety Sensitivity Index – Revised (ASI-R) than participants in the community sample. Scores on the ASI-R, in particular the Fear of Cognitive Dyscontrol and Fear of Respiratory Symptoms subscales, were strongly associated with dissociation. The Fear of Cognitive Dyscontrol scale contains items that may be described as a fear of cognitive incapacitation and appear to be dissociative in nature (e.g., item 23 “when I feel ‘spacey’ or spaced out, I worry that I may be mentally ill”). These items measure threat sensitivity to

dissociation. That Fear of Respiratory Symptoms was associated with dissociation came as something of a surprise, however, this association could be accounted for by two items in this subscale that may be described as dissociative in nature (i.e., item 17 “it scares me when my surroundings seems strange or unreal”, and item 21 “it scares me when my body feels strange or different in some way”). This pattern of results suggests that individuals who are sensitive to dissociation may be more hypervigilant to dissociation cues which could lead to an increase in trait dissociation. This is consistent with findings of Leonard, Telch, and Owen (2000) who showed that individuals scoring highly on the Dissociation Sensitivity Index (DSI: a measure of threat sensitivity to dissociation) responded to laboratory induced dissociation challenge with increased subjective fear and dissociative symptoms, relative to those scoring low on the DSI. Leonard and colleagues also found that the ASI outperformed the DSI in prediction of anxious responding to the laboratory challenge (Leonard, Telch, & Owen, 2000).

That the constructs of anxiety, anxiety sensitivity, and dissociation are distinct though related was supported by the results of the exploratory factor analysis. Despite some overlap, measures of symptoms of anxiety disorders loaded most strongly on one factor, measures of anxiety sensitivity on a second factor, and measures of dissociation on a third.

Regression analyses predicting dissociation scores based on the exploratory factor analyses, suggest that anxiety sensitivity significantly contributes to dissociation (this is discussed further below). That posttraumatic stress was predictive of dissociation was not remarkable. However, symptoms of social anxiety and agoraphobia also emerged as significant independent predictors of dissociation. Indeed agoraphobia accounted for slightly more variance than did posttraumatic stress. Interestingly, BAI scores, which index somatic symptoms of anxiety, did not emerge as significantly predictive. This result contrasts with

that of Sterlini and Bryant (2002) who found that BAI scores contributed to the prediction of peritraumatic dissociation following a sky dive.

4.2 Additional Findings

The relationships between trauma exposure, trauma intensity, symptoms of posttraumatic stress and dissociation were explored. Trauma exposure and trauma intensity were strongly associated with symptoms consistent with posttraumatic stress as measured by the PTSD Checklist (PCL-C) for the anxiety group but were not associated with each other in the community group. No difference in trauma exposure (a measure of the number of traumatic events experienced through the lifetime) was found between groups. Trauma intensity (a measure of the degree to which an event, specified as the worst event, was traumatic) was significantly different between groups, suggesting that participants in the anxiety group experienced events as more traumatic than participants in the community group. However, participants in the anxiety group reported proportionally more incidents of interpersonal violence (e.g., child and adult sexual and physical abuse) which may be experienced as more traumatic than incidents of natural or industrial disasters. This suggests that the individual trauma exposure and trauma intensity scores, as derived by the TEQ, are not accurate reflections of the traumatic nature of events.

Trauma intensity, but not trauma exposure, was moderately associated with dissociation. This is consistent with the conclusions drawn by Gershuny and Thayer (1999) that (1) individuals who report higher levels of dissociation tend to also report higher levels of trauma-related distress, and (2) individuals with PTSD report higher levels of dissociation than traumatised individuals who did not develop PTSD following trauma exposure (Gershuny & Thayer, 1999). If exposure to natural disasters and industrial traumatic events

results in lower trauma intensity scores, the relationship between trauma intensity and dissociation established in this study is also consistent with the finding that exposure to natural disasters tends to be associated with PTSD but not highly associated with dissociative symptoms (van der Kolk, 1996).

When examined in relation to the subcomponents of dissociation, trauma intensity was found to be moderately associated with experiences of depersonalisation / derealisation but to have negligible or low associations with experiences of absorption and dissociative amnesia.

Of interest is that the association between trauma intensity and dissociation held only for the anxiety group, not for the community group. No association was found between either trauma exposure or trauma intensity and dissociation for the community group. This again suggests that some third variable (e.g., anxiety sensitivity) may have a mediating role in the relationship between trauma and dissociation, such that elevations in anxiety sensitivity may increase individual susceptibility to avoidance coping under extreme stress. Individuals in the community group were shown to experience lower levels of anxiety sensitivity than individuals in the anxiety group, and perhaps, are therefore less likely to dissociate when experiencing anxious arousal. This pattern is consistent with the view put forward by Muris and Merckelback (2001) that the trauma-dissociation relationship is not simple but is an artefact of one or more third variable(s). Longitudinal studies assessing the relative contributions of trauma, anxiety sensitivity, and related constructs to dissociation will be necessary to clarify this association.

In addition to the prediction of dissociation, the role of trauma and anxiety in relation to posttraumatic stress was evaluated. Interestingly, degree of trauma exposure, not degree of trauma intensity, emerged as significant in the prediction of posttraumatic stress. Although

this result is consistent with previous research indicating that degree of trauma exposure is related to the development of PTSD (Carlson & Rosser-Hogan, 1991) perceived trauma intensity has also previously been found to highly predictive of PTSD severity (Lauterbach & Vrana, 2001). Lauterbach and Vrana (2001) found that trauma exposure and trauma intensity (as measured by the TEQ), together accounted for 30% of the variance in PTSD symptoms. Both predictors were statistically significantly different from zero. That no relationship with trauma intensity was found in the present study may simply be anomaly of this specific sample. However, since no other risk factors for the development of PTSD were examined, it is difficult to speculate about the significance of this result.

4.3 Theoretical Considerations

A recently developed model of depersonalisation proposes that the chronic experience of depersonalisation results from catastrophic misinterpretation of cognitive symptoms of anxiety (Hunter, Phillips, Chalder, Sierra, & David, 2003). This misinterpretation is similar to the process described in models of panic and other anxiety disorders as described by Clark (Clark, 1986) and may be subsumed under the broader umbrella of anxiety sensitivity. According to the conceptualisation proposed by Hunter and colleagues, patients who experience chronic depersonalisation / derealisation are fearful of the cognitive symptoms of anxiety, a fear that arises from the belief that these symptoms have harmful psychological consequences (e.g., that dissociation indicates that the person is mad or crazy). Accordingly, the authors suggest that fear of cognitive discontrol leads to an increase in anxiety when experiencing transient dissociative symptoms. The increase in anxiety then serves to exacerbate symptoms of depersonalisation / derealisation. The individual then begins to engage in avoidance behaviours (i.e., avoid situations in which they become anxious or have previously experience dissociative symptoms) and safety behaviours (i.e., behaviours that the

individual believes will prevent the feared outcome). Cognitive or attentional biases then emerge (e.g., symptom monitoring) that ultimately increase the likelihood that symptoms of anxiety or dissociation will be noticed and perceived as threatening. The avoidance and safety behaviours and cognitive biases form a maintenance cycle that perpetuates the symptoms of anxiety and dissociation. In the present study, symptoms of anxiety sensitivity consistent with the fear of cognitive discontrol were predictive of dissociation. These results support the Hunter et al (2003) model.

4.4 Methodological Considerations

A number of methodological limitations can be identified in the present study. The external validity of the samples, as well as psychometric limitations must be considered in interpreting the results of the present study.

Firstly, the anxiety group was comprised of individuals recruited from three sources and the researcher was reliant on the referral source for the diagnoses. The diagnoses were determined by registered clinical psychologists, but no formal reviews of diagnoses were conducted, nor were participants screened with any diagnostic instrument such as the Structured Clinical Interview for DSM-IV (SCID) on entry to the study. Additionally, participants were not formally assessed for dissociative disorders. The number of participants with each separate anxiety disorder was very small, making it impossible to separate the anxious sample into subgroups based on diagnosis. Moreover, because of small sample size, it was not possible to exclude participants on the basis of co-morbid diagnoses, or to statistically control for comorbidity (e.g., major depressive disorder) which may influence scores on key measures such as the CES and SODAS. Furthermore, it was impossible to ensure that all participants in this group had not received any form of treatment for their anxiety. While none

had received sufficient treatment as to alleviate their symptoms, many had begun the therapeutic process.

With regard to the community sample, no formal index of psychopathology was used, and therefore, it cannot be stated that the sample was clear of participants suffering from one or more anxiety disorder(s). The sample was one of convenience drawn from a database held at the university, and was therefore not thoroughly representative of the actual population of Christchurch. Moreover, the community and anxiety groups were not matched by demographic variables. However, the results of the present study may be ecologically valid in that they are applicable to the community at large. Further, that significant differences between mean scores of both groups were found suggests that the community and anxiety groups were derived from two distinct populations.

The process of recruiting volunteers for this study was complicated by a number of difficulties, including lack of or insufficient incentive to participate, and difficulty accessing the clinical population. Consequently, neither group were comprised of random samples of participants, and the clinical group is both small and mixed in terms of diagnosis, severity and treatment progress (as described above). The small sample size in the anxiety group may account for the lack of significant correlations as compared with the combined sample and the community group alone.

The measures employed in this study also constrain the validity and the comparability of the results of the present study to past research. For example, while the Beck Anxiety Inventory is a well-validated and reliable measure of anxiety, it is largely a measure of the somatic symptoms of anxiety which frequently correspond with symptoms of other health problems. Given that a large proportion of the community sample were of retirement age

and many had health difficulties, other measures such as the Hospital Anxiety and Depression Scale may have given a more accurate representation of anxious arousal in this sample.

Use of the Curious Experiences Survey (CES) also limited the comparability of the findings of this study with previous research. Although the CES has been shown to be a superior measure to the Dissociative Experiences Scale, most studies use the latter, which has a completely different response format and range of scores. Similar difficulties arose in using the Scale of Dissociative Activities, which had previously been used in only one study with university undergraduate students as participants.

The cross-sectional correlational design of the present study precludes causal inferences being drawn; therefore, the results of the present study are open to various causal interpretations. It may be that susceptibility to high levels of dissociation (trait dissociation) induces sensitivity to cognitive discontrol and other bodily sensations which in turn, results in anxious arousal exhibited as an anxiety disorder.

Other variables not included in the study may better account for observed associations among the dissociation and anxiety variables. Although the anxiety sensitivity variables contributed most to the variance in dissociation scores, other variables may yield better explanatory power.

Third, this study relied on retrospective reporting in the absence of the primary investigator rather than state assessment of anxiety and dissociative experiences. Retrospective reporting is subject to both distortions of memory and socially desirable responding (Robinson & Clore, 2002; Ross, 1989). Moreover, questionnaires were not able to be screened for errors or missed responses, resulting in quite some unusable data.

4.5 Clinical Implications

The observed strong association between symptoms of various anxiety disorders and dissociation gives rise to a number of implications for assessment and treatment. With regard to assessment, individuals presenting with anxiety difficulties of all kinds should be routinely screened for clinically significant dissociation. Particularly with regard to treatments involving exposure to avoided stimuli, dissociation is thought to impair the necessary cognitive and emotional processing required to decrease anxious arousal in the presence of such stimuli (Becker & Zayfert, 2001; Feeny & Danielson, 2004). Assessment that promoted awareness of dissociative tendencies before approaching treatment by exposure therapy would therefore be a useful.

Individuals who experience clinically significant levels of dissociation may benefit from thorough assessment of anxiety sensitivity. Such assessment may assist clinicians in identifying appropriate interoceptive cues for exposure targets. Everyday experiences of dissociation may abate with safely guided exposure tasks to stimuli that have previously induced dissociation. Indeed one may find that exposure tasks specifically associated with symptoms of panic or hyperarousal (common to all anxiety disorders, excepting generalised anxiety⁸) may have the secondary benefit of reducing experiences of depersonalisation or derealisation.

Therapeutic direction toward tasks that increase the individual's attentional focus to the external environment (e.g., grounding strategies used in therapy for PTSD, Attention Training as in therapy for panic) may also prove useful in reducing the degree of attention that is directed to internal, cognitive symptoms.

Recent research by Hunter, Baker, Phillips, Sierra and David (2005) support this suggestion. These authors report the results of a treatment study utilising cognitive-behaviour

⁸ In the present study, generalised anxiety as assessed with the PSWQ was not a significant independent predictor of dissociation.

therapy for patients with depersonalisation disorder. In this study, it was hypothesised that patients experienced catastrophic misinterpretation of the cognitive symptoms of anxiety, equivalent to a fear of cognitive discontrol as described in the anxiety sensitivity literature. Treatment included helping patients to reinterpret their symptoms in a non-threatening way. Clinically and statistically significant reductions in symptoms of dissociation and anxiety were found post-treatment and at six-month follow-up (Hunter, Baker, Phillips, Sierra, & David, 2005). That outcome suggests that symptoms of dissociation are best reduced by treating underlying anxiety, a result that is consistent with the notion that dissociation results from anxious arousal and is maintained by the catastrophic misinterpretation of that arousal.

4.6 Implications for Future Research

Within the methodological limitations, treatment implications and theoretical anomalies addressed above, the results of this study suggest directions for future research.

Firstly, large scale clinic-based comparative studies of individuals diagnosed with various anxiety disorders should be conducted with formal diagnostic assessment for dissociative disorders in addition to the anxiety disorders. Such research would contribute to our understanding of how specific forms of anxious arousal related to various dissociative experiences, which would in turn guide clinical assessment and intervention strategies. Larger sample sizes would also permit for a more comprehensive range of covariates to be controlled for.

Secondly, research that comparatively evaluates measures of dissociation such as the DES, CES and SODAS would be useful in guiding researchers and clinicians alike in their assessment strategies.

Third, state assessment of anxiety and dissociative experiences would clarify the direction of the relationship between anxiety and dissociation in a way that correlational methods based

on retrospective reporting cannot. Methods such as experience sampling (as described by Mayer and Farmer, 2003), or lab induced hyperarousal, could be utilised to evaluate this relationship.

Research directed at the replication of the relationship between anxiety sensitivity and dissociation is necessary to substantiate the results of the present research. Studies examining the role of anxiety sensitivity (or dissociation sensitivity) could incorporate treatment strategies proposed by Hunter and colleagues, including follow-up assessments of each construct (dissociation, anxiety, anxiety sensitivity). Unfortunately, the research conducted by Hunter et al., (2005) did not include a measure of anxiety sensitivity *per se*. Replication of their results with the inclusion of such measures would increase the validity of their theoretical model.

Of interest would be to examine the relationship between each indicator of trauma intensity and level of posttraumatic stress symptoms and dissociation. The trauma intensity score is derived from four questions relating to the event that the respondent perceives as most traumatic. It is possible that the degree to which the respondent perceived the event as traumatic at the time, or currently perceives the event, is more indicative of posttraumatic stress than perceived degree of physical harm or threat to life. With respect to dissociation, it may be that different forms of trauma are related to different experiences of dissociation. For example, child sexual abuse may be associated with increased levels of dissociative amnesia, while witnessing extreme violence may be associated with increased symptoms of depersonalisation / derealisation. Although this is purely speculative, such research may shed light on the mechanisms involved in the relationship between trauma, anxious arousal and dissociation.

Clarification of the nature of cognitive constriction, or narrowing of attention, experienced in social phobia would also be useful. The extant literature describing this

constriction does not use the term dissociation, however, the two appear to be qualitatively similar.

Lastly, this is the only known study of dissociative experiences in a New Zealand population. Replication and extension of these results in a representative sample of the New Zealand community and clinical anxiety populations would be useful.

However, while research continues to be cross-sectional and retrospective in nature, the direction of causality between dissociation and anxiety will remain unclear. Ideally, longitudinal research throughout the lifespan with repeated evaluation of constructs related to dissociation (e.g., anxiety sensitivity, anxiety, and trauma) should be conducted. Such methodology would ultimately clarify the direction of causality and may shed light on other mediating variables.

4.7 Conclusion(s)

Dissociative experiences appear to be relatively common within the community of Christchurch, New Zealand. Treatment-seeking individuals with anxiety disorders experience greater levels of dissociation than individuals from the community. The nature of these experiences appears to be similar to that experienced by individuals from other western cultures such as North America. The results of the present study are consistent with the body of literature suggesting an etiological association between anxiety and dissociation, and in particular, between anxiety and symptoms of depersonalisation / derealisation. This may better be conceptualised as a relationship between anxiety and dissociative detachment rather than dissociative compartmentalisation. This suggests the need for routine screening of dissociation in the assessment and treatment of anxiety disorders. Moreover, the finding that anxiety sensitivity, specifically sensitivity to cognitive discontrol, is predictive of elevated

levels of dissociation suggests directions for treatment of clinically significant dissociative experiences.

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APPENDIX A

VOLUNTEER INFORMATION SHEET (ADU)

Title of Research:

An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment

Principal Investigator:

Jacqueline K J Harris
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 7197 (Office)
027 497 8418 (Cellular)

Research Supervisors:

Associate Professor Neville Blampied
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 6199 (Office)

You are invited to take part in the research project entitled *An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment*. This study seeks to examine alterations in experience that relate to a disconnection or disengagement from oneself and / or the environment, and experiences anxiety. Prior to participation in this research, you are invited to review this information sheet and consider the attached consent form. If, after reading that information, you are willing to participate in this research, please sign the consent form. You do not have to decide now whether to participate, and it is your right to choose whether you want to be involved in the study.

The Study: Specific Aims of the Study

The aim of this study is to obtain an understanding of whether people who experience ongoing anxiety also experience a form of disconnection from themselves or their environment. Different types of anxiety include panic, social anxiety, worry and posttraumatic stress.

Participant Requirements: What will I have to do?

Participants are selected for this study by the primary investigator (Jacqueline Harris). The primary investigator has discussed the study with the psychologists and other professionals at the Anxiety Disorders Unit. If you agree to participate, a time will be

arranged for assessment, which can be either immediately or after you have had some time to think about participating. It is hoped that 40 people diagnosed with an anxiety disorder will participate in this study.

Completion of the questionnaires will occur in either your own home or at the Anxiety Disorders Unit. The reasons for doing this are (1) to be in an environment where you feel comfortable; (2) it is hoped that assessment can be planned around existing appointments so you will not need to travel; and (3) to ensure confidentiality.

This is not a treatment study, and as such, you will be required for one session only. If you agree to participate, you can expect the following:

1. You will be asked to sign the consent form, giving your permission to be involved in the study.
2. After this, you will be asked to complete a series of paper and pencil multi-choice questionnaires, much like you did before your interview at the Anxiety Disorders Unit; there is no fixed time limit on any of the questionnaires. The questionnaires assess physical features, thought and emotional experiences associated with different types of anxiety, and experiences of altered awareness that you may or may not have experienced.
3. You will also be asked to complete a demographic information sheet. The demographic sheet asks about background information including information about prescription and other drug use that will help to determine how representative the results from the study are. Such information will help to identify any limitations of this research.
4. On average it may take 35 – 45 minutes to complete the questionnaires

You do not have to answer any questions that you do not want to and you may withdraw from the study at any time without giving a reason. You are welcome to use whanau support or a friend to help ask questions and understand the study. If you are tired, you may take a break at any time throughout the assessment. If throughout the study there are indications that you may benefit from further assessment, we may suggest that you see your GP or another appropriate person.

Potential Harms (Injury, Discomforts or Inconvenience):

In the performance of the tasks and application of the procedures there are no known harms or risks associated with involvement in this study. However, in the event that you do become distressed because of your involvement in the study, you have the opportunity to discuss these concerns with the primary investigator and/or a senior psychologist. Please telephone the principal investigator on 027 497 8418 or 364 2987 (Ext 7196) or Neville Blampied (Psychologist) on 364 2987 (Ext 6199). Participation in this study should be stopped should any harmful effects appear, or if your GP / case manager feels it is not in your best interest to continue. If you have any queries or concerns regarding your rights as a participant in the study, you may wish to contact a Health and Disability Services Consumer Advocate, telephone 377 7501 in Christchurch or 0800 377 766 outside Christchurch.

Potential Benefits:

Participation in this study will be of no direct benefit to you. However, upon completion of the study, you will be offered the opportunity of having the results of the research battery

of questionnaires shared with your therapist / case manager at the Anxiety Disorders Unit. A summary of results would be made available to your therapist. This information can be useful to the therapist(s) involved in your care by identifying areas where you may experience difficulties.

It is possible that while participating in this study that you may learn something about yourself. This may be a pleasant, neutral or unpleasant experience. Again, if you do feel uncomfortable about continuing the study, you may stop your participation at any time.

Also, the results of this study may contribute to the greater understanding of people with anxiety disorders. It is hoped that the information gathered from this study will develop and provide an impetus for further investigation into the complex phenomena of anxiety.

Confidentiality:

Participants can feel assured that all information obtained from this study will be kept in the strictest of confidence. No material which could personally identify you will be used in any reports on this study. All information will be kept locked in a secure office at the University of Canterbury at all times, with access granted to only the principal researcher and the identified supervisors. The only exception to confidentiality is if we (principal researcher and supervisors) become concerned about the safety of a participant or the safety of others, confidentiality may need to be breached to ensure the safety of all parties involved.

Publication of Results:

The results of this project will be published in the form of a research thesis submitted to the University of Canterbury and may also be submitted for publication in a scientific journal. However, you are assured of the complete confidentiality of the data gathered in this investigation. The following steps will be taken to ensure confidentiality and anonymity: All information/data obtained from this study will be quickly converted into numerical codes with individual names removed (*means that no information that could identify you will be released or published without your consent*).

The only person to have access to the initial data containing the individual names will be the principal examiner. Once converted all identifiable information will either be stored in a secure location at the University of Canterbury (cc: Department of Psychology policy) or destroyed. If you would like, we can send you a summary of the conclusions of the study once the analysis is completed. Please note that there will be some delay before all the work is done and this report can be sent out (*please indicate your preference on the consent form*).

Future Participation:

Please indicate on the consent form whether we may contact you at a later date, to invite you to participate in a follow-up study. Remember, you are under no obligation to consent to being contacted in the future. Participation is entirely voluntary (i.e., your choice).

Statement of Approval:

This study has received ethical approval from the Human Ethics Committee at the University of Canterbury and from the Canterbury Ethics Committee (District Health Board). This project is being conducted as a requirement for the degree of Master of Arts at the University of Canterbury Jacqueline Harris (principal researcher) under the supervision of Mr

Neville Blampied and with the guidance of Mr Ron Chambers. If you have any concerns regarding participation in this project we will be pleased to discuss these with you.

Thank-you for your time

Jacqueline Harris B. A., DipGrad., PGDipArts
Principal Investigator
MA (Psychology) and Clinical Psychology Student
Ph: 364-2987 Ext 7197

Neville Blampied
Primary Supervisor
Ph: 364 2987 (Ext. 6199)

APPENDIX B

VOLUNTEER INFORMATION SHEET (Support)

Title of Research:

An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment

Principal Investigator:

Jacqueline K J Harris
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 7197 (Office)
027 497 8418 (Cellular)

Research Supervisor:

Assoc. Professor Neville Blampied
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 6199 (Office)

You are invited to take part in the research project entitled *An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment*. This study seeks to examine alterations in experience that relate to a disconnection or disengagement from oneself and / or the environment, and experiences of anxiety. Prior to participation in this research, you are invited to review this information sheet and consider the attached consent form. If, after reading that information, you are willing to participate in this research, please sign the consent form. You do not have to decide now whether to participate, and it is your right to choose whether you want to be involved in the study.

The Study: *Specific Aims of the Study*

The aim of this study is to obtain an understanding of whether people who experience chronic anxiety also experience a form of disconnection from themselves or their environment. Different types of anxiety include panic, social anxiety, worry and posttraumatic stress.

Participant Requirements: *What will I have to do?*

Participants are selected for this study by the primary investigator (Jacqueline Harris). The primary investigator has discussed the study with the psychologist from whom you have sought assessment and / or treatment. It is hoped that forty people diagnosed with an anxiety disorder will participate in this study.

If you agree to participate, you can expect the following:

1. You will be asked to sign the consent form, giving your permission to be involved in the study.
2. After this, you will be asked to complete a series of paper and pencil multi-choice questionnaires. There is no fixed time limit on any of the questionnaires. The questionnaires assess physical features, thought and emotional experiences associated with different types of anxiety, and experiences of altered awareness that you may or may not have experienced.
3. You will also be asked to complete a demographic information sheet. The demographic sheet asks about background information including information about prescription and other drug use that will help to determine how representative the results from the study are. Such information will help to identify any limitations of this research.
4. On average it may take 35 – 45 minutes to complete the questionnaires

You do not have to answer any questions that you do not want to, and you may withdraw from the study at any time without giving a reason.

Potential Harms (Injury, Discomforts or Inconvenience):

In the performance of the tasks and application of the procedures there are no known harms or risks associated with involvement in this study. However, in the event that you do become distressed because of your involvement in the study, you have the opportunity to discuss these concerns with the primary examiner and/or a registered psychologist. Please telephone the principal investigator on 027 497 8418 or 364 2987 (Ext 7196) or the psychologist you have been seeing. Participation in this study will be stopped should you experience any harmful effects. If you have any queries or concerns regarding your rights as a participant in the study, you may wish to contact a Health and Disability Services Consumer Advocate, telephone 377 7501 in Christchurch or 0800 377 766 outside Christchurch.

Potential Benefits:

Participation in this study will be of no direct benefit to you. However, upon completion of the study, you will be offered the opportunity of having the results of the research battery of questionnaires shared with your psychologist / therapist. A summary of results would be made available to your therapist. This information can be useful to the therapist(s) involved in your care by identifying areas where you may experience difficulties.

It is possible that while participating in this study, you may learn something about yourself. This may be a pleasant, neutral or unpleasant experience. Again, if you do feel uncomfortable about continuing the study, you may stop your participation at any time.

Also, the results of this study may contribute to the greater understanding of people with anxiety disorders. It is hoped that the information gathered from this study will develop and provide an impetus for further investigation into the complex phenomena of anxiety.

Confidentiality:

Participants can feel assured that all information obtained from this study will be kept in the strictest of confidence. No material which could personally identify you will be used in any reports on this study. All information will be kept locked in a secure office at the University of Canterbury at all times, with access granted to only the principal researcher and the identified supervisor. The only exception to confidentiality is if we (principal researcher and supervisors) become concerned about

the safety of a participant or the safety of others, confidentiality may need to be breached to ensure the safety of all parties involved.

Publication of Results:

The results of this project will be published in the form of a research thesis submitted to the University of Canterbury and may also be submitted for publication in a scientific journal. However, you are assured of the complete confidentiality of the data gathered in this investigation. The following steps will be taken to ensure confidentiality and anonymity: All information/data obtained from this study will be quickly converted into numerical codes with individual names removed (*means that no information that could identify you will be released or published without your consent*).

The only person to have access to the initial data containing the individual names will be the principal examiner. Once converted all identifiable information will either be stored in a secure location at the University of Canterbury (cc: Department of Psychology policy) or destroyed. If you would like, we can send you a summary of the conclusions of the study once the analysis is completed. Please note that there will be some delay before all the work is done and this report can be sent out (*please indicate your preference on the consent form*).

Future Participation:

Please indicate on the consent form whether we may contact you at a later date, to invite you to participate in a follow-up study. Remember, you are under no obligation to consent to being contacted in the future. Participation is entirely voluntary (i.e., your choice).

Statement of Approval:

This study has received ethical approval from the Human Ethics Committee at the University of Canterbury and from the Canterbury Ethics Committee (District Health Board). This project is being conducted as a requirement for the degree of Master of Arts at the University of Canterbury by Jacqueline Harris (principal researcher) under the supervision of Associate Professor Neville Blampied, and with the guidance of Mr Ron Chambers (Director, Anxiety Disorders Unit). If you have any concerns regarding participation in this project we will be pleased to discuss these with you.

Thank-you for your time

Jacqueline Harris B. A., DipGrad., PGDipArts
Principal Investigator
MA (Psychology) and Clinical Psychology Student
Ph: 364-2987 Ext 7197

Neville Blampied
Primary Supervisor
Ph: 364 2987 (6199)

Ron Chambers
Advisor
(Anxiety Disorders)
Ph: 353 0470

APPENDIX C

VOLUNTEER INFORMATION SHEET (PP)

Title of Research:

An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment

Principal Investigator:

Jacqueline K J Harris
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 7197 (Office)
027 497 8418 (Cellular)

Research Supervisor:

Assoc. Professor Neville Blampied
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 6199 (Office)

You are invited to take part in the research project entitled *An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment*. This study seeks to examine alterations in experience that relate to a disconnection or disengagement from oneself and / or the environment, and experiences of anxiety. Prior to participation in this research, you are invited to review this information sheet and consider the attached consent form. If, after reading that information, you are willing to participate in this research, please sign the consent form. You do not have to decide now whether to participate, and it is your right to choose whether you want to be involved in the study.

The Study: *Specific Aims of the Study*

The aim of this study is to obtain an understanding of whether people who experience chronic anxiety also experience a form of disconnection from themselves or their environment. Different types of anxiety include panic, social anxiety, worry and posttraumatic stress.

Participant Requirements: *What will I have to do?*

Participants are selected for this study by the primary investigator (Jacqueline Harris). It is hoped that forty people diagnosed with an anxiety disorder will participate in this study.

If you agree to participate, you can expect the following:

1. You will be asked to sign the consent form, giving your permission to be involved in the study.
2. After this, you will be asked to complete a series of paper and pencil multi-choice questionnaires. There is no fixed time limit on any of the questionnaires. The questionnaires assess physical features, thought and emotional experiences associated with different types of anxiety, and experiences of altered awareness that you may or may not have experienced.
3. You will also be asked to complete a demographic information sheet. The demographic sheet asks about background information including information about prescription and other drug use that will help to determine how representative the results from the study are. Such information will help to identify any limitations of this research.
4. On average it may take 35 – 45 minutes to complete the questionnaires

You do not have to answer any questions that you do not want to, and you may withdraw from the study at any time without giving a reason.

Potential Harms (Injury, Discomforts or Inconvenience):

In the performance of the tasks and application of the procedures there are no known harms or risks associated with involvement in this study. However, in the event that you do become distressed because of your involvement in the study, you have the opportunity to discuss these concerns with the primary examiner and/or a registered psychologist. Please telephone the principal investigator on 027 497 8418 or 364 2987 (Ext 7196) or the psychologist you have been seeing. Participation in this study will be stopped should you experience any harmful effects. If you have any queries or concerns regarding your rights as a participant in the study, you may wish to contact a Health and Disability Services Consumer Advocate, telephone 377 7501 in Christchurch or 0800 377 766 outside Christchurch.

Potential Benefits:

Participation in this study will be of no direct benefit to you. However, upon completion of the study, you will be offered the opportunity of having the results of the research battery of questionnaires shared with your psychologist / therapist. A summary of results would be made available to your therapist. This information can be useful to the therapist(s) involved in your care by identifying areas where you may experience difficulties.

It is possible that while participating in this study, you may learn something about yourself. This may be a pleasant, neutral or unpleasant experience. Again, if you do feel uncomfortable about continuing the study, you may stop your participation at any time.

Also, the results of this study may contribute to the greater understanding of people with anxiety disorders. It is hoped that the information gathered from this study will develop and provide an impetus for further investigation into the complex phenomena of anxiety.

Confidentiality:

Participants can feel assured that all information obtained from this study will be kept in the strictest of confidence. No material which could personally identify you will be used in any reports on this study. All information will be kept locked in a secure office at the University of Canterbury at all times, with access granted to only the principal researcher and the identified supervisor. The only exception to confidentiality is if we (principal researcher and supervisors) become concerned about the safety of a participant or the safety of others, confidentiality may need to be breached to ensure the safety of all parties involved.

Publication of Results:

The results of this project will be published in the form of a research thesis submitted to the University of Canterbury and may also be submitted for publication in a scientific journal. However, you are assured of the complete confidentiality of the data gathered in this investigation. The following steps will be taken to ensure confidentiality and anonymity: All information/data obtained from this study will be quickly converted into numerical codes with individual names removed (*means that no information that could identify you will be released or published without your consent*).

The only person to have access to the initial data containing the individual names will be the principal examiner. Once converted all identifiable information will either be stored in a secure location at the University of Canterbury (cc: Department of Psychology policy) or destroyed. If you would like, we can send you a summary of the conclusions of the study once the analysis is completed. Please note that there will be some delay before all the work is done and this report can be sent out (*please indicate your preference on the consent form*).

Future Participation:

Please indicate on the consent form whether we may contact you at a later date, to invite you to participate in a follow-up study. Remember, you are under no obligation to consent to being contacted in the future. Participation is entirely voluntary (i.e., your choice).

Statement of Approval:

This study has received ethical approval from the Human Ethics Committee at the University of Canterbury and from the Canterbury Ethics Committee (District Health Board). This project is being conducted as a requirement for the degree of Master of Arts at the University of Canterbury by Jacqueline Harris (principal researcher) under the supervision of Associate Professor Neville Blampied, and with the guidance of Mr Ron Chambers (Director, Anxiety Disorders Unit). If you have any concerns regarding participation in this project we will be pleased to discuss these with you.

Thank-you for your time

Jacqueline Harris B. A., DipGrad., PGDipArts
Principal Investigator
MA (Psychology) and Clinical Psychology Student
Ph: 364-2987 Ext 7197

Neville Blampied
Primary Supervisor
Ph: 364 2987 (6199)

Ron Chambers
Advisor
(Anxiety Disorders)
Ph: 353 0470

APPENDIX D

CONSENT FORM (ADU)

Title of Research:

*An Investigation into the Association between Anxiety and the Experience of
Disconnection from Self or the Environment*

REQUEST FOR INTERPRETER

English	I wish to have an interpreter.	Yes	No
Maori	E hiahia ana ki tetahi kaiwhakamaori/kaiwhaka pakeha korero.	Ae	Kao
Somoan	Out e mana'o ia I ai se fa'amatala upu.	Ioe	Leai
Tongan	Oku ou fiema'u ha fakatonulea.	Io	Ikai
Cook Island	Ka inangaro au i tetai tangata uri reo.	Ae	Kare
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu.	E	Nakai

Principal Investigator:

Jacqueline K J Harris
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 (Ext. 7197) (Office)
(027) 497 8418 (Cellular)

Research Supervisors:

Associate Professor Neville Blampied
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 (ext. 6199) (Office)

This study seeks to examine the associations that exist between anxiety and experiences of disconnection from oneself or the environment. You have been invited to participate in this study because you have presented for assessment and / or treatment for an anxiety-related condition at the

Anxiety Disorders Unit. Thank you for your interest in participating in the study. Please read the following information carefully:

In agreeing to participate in the study,

- I have read and understand the information sheet dated 30/07/2007 for volunteers taking part in this study designed to investigate the relationship between anxiety and experiences of consciousness
- I have had the opportunity to discuss this study with the investigators, and am satisfied with answers I have been given
- I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time including withdrawal of any information I have provided. I understand that I can withdraw from participation at any time without having to give a reason and that this will in no way affect my continuing healthcare or future healthcare
- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study
- I have had time to consider whether to take part in this study
- I know whom to contact if I have any questions about my participation in this study

Please complete the following:

1. I agree to the primary investigator, Jacqueline Harris, having access to my *assessment information* on file at the Anxiety Disorders Unit

YES

NO

2. I wish to have a summary of the results of my participation given to my primary therapist or case co-ordinator at the Anxiety Disorders Unit

YES

NO

3. I wish to receive a summary of the overall results of the study (*Please be advised that there may be a significant delay between the data collection and publication of the results*)

YES

NO

4. Although I do not wish to receive a summary of the overall results of the study, I would like the primary investigator to discuss the outcomes of the study with me

YES

NO

5. I consent to being contacted in the future for a follow-up study (*note: this will not affect whether or not you participate in the present study*)

YES

NO

6. I consent to the publication of the results of this study with the understanding that anonymity will be preserved. Publication of these results may be in a (i) thesis (MA); (ii) conference presentations; (iii) presentations to support groups; (iv) journal publications. I understand that if study findings are presented in any of these media, only group findings will be presented. No identifying information about individual participants will be presented.

YES

NO

7. I consent to the storage of my completed questionnaires for a period of 10 years on the condition that they are stored without any identifying information and in a secure location at the University of Canterbury.

YES

NO

8. As part of this research, I also consent to respond to a brief questionnaire concerning my use of medications and other drugs. As with all other information collected in relation to this research, I understand that my responses to the questionnaire will be kept in the strictest confidence.

YES

NO

I _____ (print full name) have read and understood the description of the above-named project. On this basis I agree to participate as a subject in this study.

Date: _____

Signature: _____

Primary Investigator: Jacqueline Harris (see contact details on first page)

Project Explained by: _____ (Signature)

Date: _____

Project Role: Master of Arts (Psychology)

Primary Supervisor: Mr Neville Blampied (Associate Professor, Psychology)

Advisor: Mr Ron Chambers (Clinical Psychologist)

APPENDIX E

VOLUNTEER CONSENT FORM (Support)

Title of Research:

An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment

REQUEST FOR INTERPRETER

English	I wish to have an interpreter.	Yes	No
Maori	E hiahia ana ki tetahi kaiwhakamaori/kaiwhaka pakeha korero.	Ae	Kao
Somoan	Out e mana'o ia I ai se fa'amatala upu.	Ioe	Leai
Tongan	Oku ou fiema'u ha fakatonulea.	Io	Ikai
Cook Island	Ka inangaro au i tetai tangata uri reo.	Ae	Kare
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu.	E	Nakai

Principal Investigator:

Jacqueline K J Harris
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 7197 (Office)
027 497 8418 (Cellular)

Research Supervisor:

Assoc. Professor Neville Blampied
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 6199 (Office)

This study seeks to examine the associations that exist between anxiety and experiences of disconnection from oneself or the environment. You have been invited to participate in this study because you have presented for assessment and / or treatment for an anxiety-related condition. Thank you for your interest in participating in the study. Please read the following information carefully:

In agreeing to participate in the study,

- I have read and understand the information sheet dated 11/ 05/ 2006 for volunteers taking part in this study designed to investigate the relationship between anxiety and experiences of consciousness
- I have had the opportunity to discuss this study with the investigators, and am satisfied with answers I have been given
- I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time including withdrawal of any information I have provided. I understand that I can withdraw from participation at any time without having to give a reason and that this will in no way affect my continuing healthcare or future healthcare
- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study
- I have had time to consider whether to take part in this study
- I know whom to contact if I have any questions about my participation in this study

Please complete the following:

1. I wish to have a summary of the results of my participation given to my primary therapist or case co-ordinator

YES NO
2. I wish to receive a summary of the overall results of the study (*Please be advised that there may be a significant delay between the data collection and publication of the results*)

YES NO
3. Although I do not wish to receive a summary of the overall results of the study, I would like the primary investigator to discuss the outcomes of the study with me

YES NO
4. I consent to being contacted in the future for a follow-up study (*note: this will not affect whether or not you participate in the present study*)

YES NO
5. I consent to the publication of the results of this study with the understanding that anonymity will be preserved. Publication of these results may be in a (i) thesis (MA); (ii) conference presentations; (iii) presentations to support groups; (iv) journal publications. I understand that if study findings are presented in any of these media, only group findings will be presented. No identifying information about individual participants will be presented.

YES NO

6. I consent to the storage of my completed questionnaires for a period of 10 years on the condition that they are stored without any identifying information and in a secure location at the University of Canterbury.

YES

NO

7. As part of this research, I also consent to respond to a brief questionnaire concerning my use of medications and other drugs. As with all other information collected in relation to this research, I understand that my responses to the questionnaire will be kept in the strictest confidence.

YES

NO

I _____ (print full name) have read and understood the description of the above-named project. On this basis I agree to participate as a subject in this study.

Date: _____

Signature: _____

Primary Investigator: Jacqueline Harris (see contact details on first page)

Date: _____

Project Role: Master of Arts (Psychology)

Primary Supervisor: Mr Neville Blampied (Associate Professor, Psychology)

Advisor: Mr Ron Chambers (Clinical Psychologist)

APPENDIX F

VOLUNTEER CONSENT FORM (PP)

Title of Research:

An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment

REQUEST FOR INTERPRETER

English	I wish to have an interpreter.	Yes	No
Maori	E hiahia ana ki tetahi kaiwhakamaori/kaiwhaka pakeha korero.	Ae	Kao
Somoan	Out e mana'o ia I ai se fa'amatala upu.	Ioe	Leai
Tongan	Oku ou fiema'u ha fakatonulea.	Io	Ikai
Cook Island	Ka inangaro au i tetai tangata uri reo.	Ae	Kare
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu.	E	Nakai

Principal Investigator:

Jacqueline K J Harris
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 7197 (Office)
027 497 8418 (Cellular)

Research Supervisor:

Assoc. Professor Neville Blampied
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 6199 (Office)

This study seeks to examine the associations that exist between anxiety and experiences of disconnection from oneself or the environment. You have been invited to participate in this study because you have presented for assessment and / or treatment for an anxiety-related condition. Thank you for your interest in participating in the study. Please read the following information carefully:

In agreeing to participate in the study,

- I have read and understand the information sheet dated 11/ 05/ 2006 for volunteers taking part in this study designed to investigate the relationship between anxiety and experiences of consciousness
- I have had the opportunity to discuss this study with the investigators, and am satisfied with answers I have been given
- I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time including withdrawal of any information I have provided. I understand that I can withdraw from participation at any time without having to give a reason and that this will in no way affect my continuing healthcare or future healthcare
- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study
- I have had time to consider whether to take part in this study
- I know whom to contact if I have any questions about my participation in this study

Please complete the following:

1. I wish to have a summary of the results of my participation given to my primary therapist or case co-ordinator (if yes, please give name and postal address of primary therapist)

YES

NO

2. I wish to receive a summary of the overall results of the study (*Please be advised that there may be a significant delay between the data collection and publication of the results*)

YES

NO

3. Although I do not wish to receive a summary of the overall results of the study, I would like the primary investigator to discuss the outcomes of the study with me

YES

NO

4. I consent to being contacted in the future for a follow-up study (*note: this will not affect whether or not you participate in the present study*)

YES

NO

5. I consent to the publication of the results of this study with the understanding that anonymity will be preserved. Publication of these results may be in a (i) thesis (MA); (ii) conference presentations; (iii) presentations to support groups; (iv) journal publications. I understand that if study findings are presented in any of these media, only group findings will be presented. No identifying information about individual participants will be presented.

YES

NO

6. I consent to the storage of my completed questionnaires for a period of 10 years on the condition that they are stored without any identifying information and in a secure location at the University of Canterbury.

YES

NO

7. As part of this research, I also consent to respond to a brief questionnaire concerning my use of medications and other drugs. As with all other information collected in relation to this research, I understand that my responses to the questionnaire will be kept in the strictest confidence.

YES

NO

I _____ (print full name) have read and understood the description of the above-named project. On this basis I agree to participate as a subject in this study.

Date: _____

Signature: _____

Primary Investigator: Jacqueline Harris (see contact details on first page)

Date: _____

Project Role: Master of Arts (Psychology)

Primary Supervisor: Mr Neville Blampied (Associate Professor, Psychology)

Advisor: Mr Ron Chambers (Clinical Psychologist)

APPENDIX G

VOLUNTEER INFORMATION SHEET (Community Sample)

Title of Research:

An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment

Principal Investigator:

Jacqueline K J Harris
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 7917 (Office)
027 497 8418 (Cellular)

Research Supervisors:

Associate Professor Neville Blampied
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 6199 (Office)

You are invited to take part in the research project entitled *An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment*. This study seeks to examine alterations in experience that relate to a disconnection or disengagement from oneself and / or the environment, and experiences of anxiety. Prior to participation in this research, you are invited to review this information sheet and consider the attached consent form. If, after reading that information, you are willing to participate in this research, please sign the consent form. You do not have to decide now whether to participate, and it is your right to choose whether you want to be involved in the study.

The Study: Specific Aims of the Study

The aim of this study is to obtain an understanding of whether people who experience anxiety also experience a form of disconnection from themselves or their environment. Different types of anxiety include panic, social anxiety, worry and posttraumatic stress, which can occur in people from the general population.

Participant Requirements: *What will I have to do?*

Participants are selected for this study by the primary investigator (Jacqueline Harris). If you agree to participate, a package of questionnaires will be mailed to you. It is hoped that eighty people from the general population will participate in this study.

If you agree to participate, you can expect the following:

1. You will be asked to sign the consent form, giving your permission to be involved in the study.
2. After this, you will be asked to complete ten paper and pencil multi-choice questionnaires; there is no fixed time limit on any of the questionnaires. The questionnaires assess physical features, thought and emotional experiences associated with different types of anxiety, and experiences of altered awareness that you may or may not have experienced.
3. You will also be asked to complete a demographic information sheet. The demographic sheet asks about background information, including information about prescription and other drug use that will help to determine how representative the results from the study are. Such information will help to identify any limitations of this research.
4. The completion of these questionnaires should take no more than 45 to 50 minutes.
5. Once completed, the questionnaires should be mailed back to the principal investigator in the stamped addressed envelope provided.

You do not have to answer any questions that you do not want to and you may withdraw from the study at any time without giving a reason. If you are tired, you may take a break at any time throughout the assessment. If throughout the study there are indications that you may benefit from further assessment, we may suggest that you see your GP or another appropriate person.

Potential Harms (Injury, Discomforts or Inconvenience):

In the performance of the tasks and application of the procedures there are no known harms or risks associated with involvement in this study. However, in the event that you do become distressed because of your involvement in the study, you have the opportunity to discuss these concerns with the primary investigator and/or a senior clinical psychologist. Please telephone the principal investigator on 027 497 8418 or 364 2987 (Ext 7196) or Neville Blampied on 364 2987 (Ext 6199). Participation in this study will be stopped should any harmful effects appear, or if your GP / case manager feels it is not in your best interest to continue. If you have any queries or concerns regarding your rights as a participant in the study, you may wish to contact a Health and Disability Services Consumer Advocate, telephone 377 7501 in Christchurch or 0800 377 766 outside Christchurch.

Potential Benefits:

Participation in this study will be of no direct benefit to you apart from a small token payment in the form of a \$5.00 voucher as an expression of appreciation for your participation. However, it is possible that while participating in this study that you may learn something about yourself. This may be a pleasant, neutral or unpleasant experience. Again, if you do feel uncomfortable about continuing the study, you may stop your participation at any time. Also, the results of this study may contribute to the greater understanding of the experience of anxiety and of consciousness. It is hoped that the information gathered from this study will develop and provide an impetus for further investigation into the complex phenomena of anxiety. A summary of results of the study will be made available to you if you would like to receive this.

Confidentiality:

Participants can feel assured that all information obtained from this study will be kept in the strictest of confidence. No material which could personally identify you will be used in any reports on this study. All information will be kept locked in a secure office at the University of Canterbury at all times, with access granted to only the principal researcher and the identified supervisors. The only exception to confidentiality is if we (principal researcher and supervisors) become concerned about the safety of a participant or the safety of others, in which case confidentiality may need to be breached to ensure the safety of all parties involved.

Publication of Results:

The results of this project will be published in the form of a research thesis submitted to the University of Canterbury and may also be submitted for publication in a scientific journal. However, you are assured of the complete confidentiality of the data gathered in this investigation. The following steps will be taken to ensure confidentiality and anonymity: All information/data obtained from this study will be quickly converted into numerical codes with individual names removed (*this means that no information that could identify you will be released or published without your consent*).

The only person to have access to the initial data containing the individual names will be the principal examiner and project supervisors. Once converted, all identifying information will either be stored in a secure location at the University of Canterbury (cc: Department of Psychology policy) or destroyed. If you would like, we can send you a summary of the conclusions of the study once the analysis is completed. Please note that there will be some delay before all the work is done and this report can be sent out (*please indicate your preference on the consent form*).

Future Participation:

Please indicate on the consent form whether we may contact you at a later date, to invite you to participate in a follow-up study. Remember, you are under no obligation to consent to being contacted in the future. Participation is entirely voluntary (i.e., your choice).

Statement of Approval:

This study has received ethical approval from the Human Ethics Committee at the University of Canterbury and the Canterbury Ethics Committee. This project is being conducted as a requirement for the degree of Master of Arts at the University of Canterbury Jacqueline Harris (principal researcher) under the supervision of Dr Richard Farmer and Dr Janet Latner with the guidance of Mr Ron Chambers and Mr Neville Blampied. If you have any concerns regarding participation in this project we will be pleased to discuss these with you.

Thank-you for your time

Jacqueline Harris B. A., DipGrad., PGDipArts
Principal Investigator
MA (Psychology) and Clinical Psychology Student
Ph: 364-2987 Ext 7197

Neville Blampied
Primary Supervisor
Ph: 364 2987 6199

Ron Chambers
Advisor
(Anxiety Disorders)
Ph: 353 0470

APPENDIX H

CONSENT FORM (Community Sample)

Title of Research:

An Investigation into the Association between Anxiety and the Experience of Disconnection from Self or the Environment

<u>REQUEST FOR INTERPRETER</u>			
English	I wish to have an interpreter.	Yes	No
Maori	E hiahia ana ki tetahi kaiwhakamaori/kaiwhaka pakeha korero.	Ae	Kao
Somoan	Out e mana'o ia I ai se fa'amatala upu.	Ioe	Leai
Tongan	Oku ou fiema'u ha fakatonulea.	Io	Ikai
Cook Island	Ka inangaro au i tetai tangata uri reo.	Ae	Kare
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu.	E	Nakai

Principal Investigator:

Jacqueline K J Harris
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch

Telephone: (03) 364 2987 7917 (Office)
(027) 497 8418 (Cellular)

Research Supervisors:

Associate Professor Neville Blampied
Department of Psychology
University of Canterbury
Private Bag 4800
Christchurch
Telephone: (03) 364 2987 6199 (Office)

This study seeks to examine the associations that exist between anxiety and experiences of disconnection from oneself or the environment. You are invited to participate in this study as a member of the general population, registered with the Department of Psychology at the University of Canterbury. Thank you for your interest in participating in the study. Please read the following information carefully:

In agreeing to participate in the study,

- I have read and understand the information sheet dated _____ for volunteers taking part in this study designed to investigate the relationship between anxiety and experiences of disconnection from the self or environment.
- I have had the opportunity to discuss this study with the investigators, and am satisfied with answers I have been given
- I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time including withdrawal of any information I have provided. I understand that I can withdraw from participation at any time without having to give a reason and that this will in no way affect my continuing healthcare or future healthcare
- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study
- I have had time to consider whether to take part in this study
- I know whom to contact if I have any questions about my participation in this study

Please complete the following:

1. I wish to receive a summary of the overall results of the study (*Please be advised that there may be a significant delay between the data collection and publication of the results*)
YES NO
2. Although I do not wish to receive a summary of the overall results of the study, I would like the primary investigator to discuss the outcomes of the study with me
YES NO
3. I consent to being contacted in the future for a follow-up study (*note: this will not affect whether or not you participate in the present study*)
YES NO
4. I consent to the publication of the results of this study with the understanding that anonymity will be preserved. Publication of these results may be in a (i) thesis (MA); (ii) conference presentations; (iii) presentations to support groups; (iv) journal publications. I understand that if study findings are presented in any of these media, only group findings will be presented. No identifying information about individual participants will be presented.
YES NO
5. I consent to the storage of my completed questionnaires for a period of 10 years on the condition that they are stored without any identifying information and in a secure location at the University of Canterbury.
YES NO

6. As part of this research, I also consent to respond to a brief questionnaire concerning my use of medications and other drugs. As with all other information collected in relation to this research, I understand that my responses to the questionnaire will be kept in the strictest confidence.

YES

NO

I _____ (print full name) have read and understood the description of the above-named project. On this basis I agree to participate in this study.

Date: _____

Signature: _____

Primary Investigator: Jacqueline Harris (see contact details on first page)

Project Explained by: _____ (Signature)

Date: _____

Project Role: Master of Arts (Psychology)

Primary Supervisor: Mr Neville Blampied (Associate Professor, Psychology)

Advisor: Mr Ron Chambers (Clinical Psychologist)

APPENDIX I

Code # : _____

DEMOGRAPHIC INFORMATION (Community)

This sheet asks about your background information. This information will help us determine how representative our sample is relative to the population that we are sampling from and, as a result, potential limitations of our research. Our demographic sheet also asks about any medications you might be taking. As a number of medications may influence questionnaire responses, it would be useful for us to know whether you are taking medications that may have such an effect.

1. Gender:

- ☐ Male
- ☐ Female

2. Date of Birth

___ / ___ / ___

3. Ethnicity

Tick as many boxes as you need to, to show which ethnic group(s) you belong to.

- ☐ New Zealand European
 - ☐ Māori
- Iwi Affiliation: _____

- ☐ Samoan
 - ☐ Cook Island Maori
 - ☐ Tongan
 - ☐ Niuean
 - ☐ Chinese
 - ☐ Indian
 - ☐ Other (Please specify)
- _____

4. Education

Total number of years of education: _____

5. Qualifications

Please indicate your highest qualification (e.g., No School Certificate, School Certificate, University Entrance, Bursary, Trade Certificate or Diploma, University Degree, Overseas Qualification)

6. Occupation

(Please indicate your current occupation or other source(s) of income e.g., unemployment or sickness benefit):

7. Current Relational Status

- ☐ Single (Never Married)
 - ☐ Married
 - ☐ Committed Partnership
 - ☐ Divorced
 - ☐ Separated
 - ☐ Widowed
 - ☐ Other (Please specify):
- _____

8. Current Medications

(Please provide names and the purpose for which the medication is used):

Name:

Purpose:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

APPENDIX J

Code #: _____

DEMOGRAPHIC INFORMATION (Anxiety)

This sheet asks about your background information. This information will help us determine how representative our sample is relative to the population that we are sampling from and, as a result, potential limitations of our research. Our demographic sheet also asks about any medications you might be taking. As a number of medications may influence questionnaire responses, it would be useful for us to know whether you are taking medications that may have such an effect.

1. Gender:

- ☐ Male
- ☐ Female

2. Date of Birth

___ / ___ / ____

3. Ethnicity

Tick as many boxes as you need to, to show which ethnic group(s) you belong to.

- ☐ New Zealand European
- ☐ Māori
- Iwi Affiliation: _____
- ☐ Samoan
- ☐ Cook Island Maori
- ☐ Tongan
- ☐ Niuean
- ☐ Chinese
- ☐ Indian
- ☐ Other (Please specify) _____

4. Education

Total number of years of education: _____

5. Qualifications

Please indicate your highest qualification (e.g., No School Certificate, School Certificate, University Entrance, Bursary, Trade Certificate or Diploma, University Degree, Overseas Qualification)

6. Occupation

(Please indicate your current occupation or other source(s) of income e.g., unemployment or sickness benefit):

7. Current Relational Status

- ☐ Single (Never Married)
- ☐ Married
- ☐ Committed Partnership
- ☐ Divorced
- ☐ Separated
- ☐ Widowed
- ☐ Other (Please specify): _____

8. Current Medications

(Please provide names and the purpose for which the medication is used):

Name:

Purpose:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

9. Diagnosis (Diagnoses)

(Please indicate which [if any] anxiety or other difficulty have you been diagnosed with)

APPENDIX K

Code # : _____

Curious Experiences Survey (CES)

Here are some experiences that people have in their daily lives. We are interested in *how often* you have these experiences (when you are not under the influence of alcohol or drugs). Please circle the appropriate response using the following scale:

- 1 This *never* happens to me
- 2 This *occasionally* happens to me
- 3 This *sometimes* happens to me
- 4 This *frequently* happens to me
- 5 This is almost *always* happening to me

- | | | | | | |
|---|---|---|---|---|---|
| 1. Drove or rode somewhere without remembering later what happened during all or part of the trip | 1 | 2 | 3 | 4 | 5 |
| 2. Was listening to someone talk and suddenly realised I did not hear part or all of what was said | 1 | 2 | 3 | 4 | 5 |
| 3. Found myself in a place and had no idea how I had gotten there | 1 | 2 | 3 | 4 | 5 |
| 4. Found myself dressed in clothes I didn't remember putting on | 1 | 2 | 3 | 4 | 5 |
| 5. Found new things among my belongings that I didn't remember buying | 1 | 2 | 3 | 4 | 5 |
| 6. Was approached by someone I didn't know who called me by another name or who insisted that he or she had met me before. | 1 | 2 | 3 | 4 | 5 |
| 7. Had the experience of feeling as though I was standing next to myself, or watching myself as if I was looking at a different person. | 1 | 2 | 3 | 4 | 5 |
| 8. Was told that I sometimes do not recognise a friend or family member | 1 | 2 | 3 | 4 | 5 |
| 9. Found that I had not memory for some important event in my life (for example, a wedding or graduation) | 1 | 2 | 3 | 4 | 5 |
| 10. Had the experience of being accused of lying when I did not think that I had lied. | 1 | 2 | 3 | 4 | 5 |
| 11. Had the experience of looking in the mirror and not recognising myself | 1 | 2 | 3 | 4 | 5 |
| 12. Had the experience of feeling that other people, objects, and the world around me were not real | 1 | 2 | 3 | 4 | 5 |
| 13. Had the experience of feeling that my body did not belong to me | 1 | 2 | 3 | 4 | 5 |
| 14. Had the experience of remembering a past event so vividly that it felt like it was really happening to me | 1 | 2 | 3 | 4 | 5 |
| 15. Had the experience of not being sure whether things I remember happening really did happen, or whether I just dreamed them | 1 | 2 | 3 | 4 | 5 |
| 16. Had the experience of being in a familiar place but finding it strange and unfamiliar | 1 | 2 | 3 | 4 | 5 |
| 17. Found that when I was watching television or a movie I became so absorbed in the story that I was unaware of other events happening around me | 1 | 2 | 3 | 4 | 5 |

- a. This *never* happens to me
- b. This *occasionally* happens to me
- c. This *sometimes* happens to me
- d. This *frequently* happens to me
- e. This is almost *always* happening to me

18. Found that I became so involved in a fantasy or daydream that it felt like it was really happening to me	1	2	3	4	5
19. Found that I was able to ignore pain	1	2	3	4	5
20. Find that sometimes I sit staring off into space, thinking of nothing, and am not aware of the passage of time	1	2	3	4	5
21. Talked out loud to myself	1	2	3	4	5
22. Find that in one situation I act so differently from when I'm in another situation that I feel almost as if I were two different people	1	2	3	4	5
23. Find that in certain situations I am able to do things with amazing ease and spontaneity that would usually be difficult for me.	1	2	3	4	5
24. Found that I could not remember whether I had done something or had just thought about doing that thing	1	2	3	4	5
25. Found evidence that I had done things I did not remember doing	1	2	3	4	5
26. Found writings, drawings, or notes among my belongings that I must have done but cannot remember doing	1	2	3	4	5
27. Found that I heard voices inside my head that told me to do things or that commented on things I was doing.	1	2	3	4	5
28. Felt as though I was looking at the world through a fog so that people and objects appeared far away or unclear	1	2	3	4	5
29. Felt like I was dreaming when I was awake	1	2	3	4	5
30. Felt like I was disconnected from my body	1	2	3	4	5
31. Felt that I could not move my hands or feet.	1	2	3	4	5

APPENDIX L

Code # : _____

Scale of Dissociative Activities (SODAS)

Directions: This questionnaire asks you to indicate how often you have certain experiences. Indicate the frequency by circling the “N” if the statement NEVER happens to you, “R” if the statement RARELY happens to you, “O” if the statement OCCASIONALLY happens to you, “F” if the statement FREQUENTLY happens to you, or “VF” if the statement VERY FREQUENTLY happens to you.

N=NEVER R=RARELY O=OCCASIONALLY F=FREQUENTLY VF=VERY FREQUENTLY

- | | | | | | |
|---|---|---|---|---|----|
| 1. I have difficulty staying mentally engaged when I participate in routine tasks. | N | R | O | F | VF |
| 2. My mind wanders off. | N | R | O | F | VF |
| 3. I have periods when I feel like I am detached or separate from my body. | N | R | O | F | VF |
| 4. There are occasions when I discover that I have done something even though I have no recollection of doing it. | N | R | O | F | VF |
| 5. There are times when places that were once familiar to me appear strange or different. | N | R | O | F | VF |
| 6. There are periods when I experience myself as having different personalities. | N | R | O | F | VF |
| 7. I take comfort in retreating into my own inner world | N | R | O | F | VF |
| 8. There are times when I feel I have little control over my actions or behaviour. | N | R | O | F | VF |
| 9. When I listen to people speak, I “space out” or have difficulty attending to what they say. | N | R | O | F | VF |
| 10. There are times when I feel like I am in a daze or trance | N | R | O | F | VF |
| 11. There are times when I have difficulty distinguishing what I thought about doing from what I actually did do. | N | R | O | F | VF |
| 12. There are periods during which I “lose time,” or am unaware of what happened during extended periods of time. | N | R | O | F | VF |
| 13. I engage in daydreaming. | N | R | O | F | VF |
| 14. I feel numb. | N | R | O | F | VF |
| 15. I find things in my possession which I don’t remember acquiring. | N | R | O | F | VF |
| 16. There are times when I feel a deep, dark void within me | N | R | O | F | VF |
| 17. There are periods when I lose my sense of how much time has gone by. | N | R | O | F | VF |
| 18. There are occasions when people who I know momentarily seem unfamiliar to me. | N | R | O | F | VF |
| 19. I have difficulty focusing my attention or concentration for long periods of time. | N | R | O | F | VF |

N=NEVER R=RARELY O=OCCASIONALLY F=FREQUENTLY VF=VERY FREQUENTLY

20. There are times when I find myself emerge from a period during which I had clearly been doing something, but I cannot remember what it was that I was doing.	N	R	O	F	VF
21. I have feelings of emptiness.	N	R	O	F	VF
22. I am bothered by not having a clear sense of who I really am.	N	R	O	F	VF
23. There are occasions when I have the experience of hearing sounds associated with my past, even though there is nothing in my present environment that produced those sounds.	N	R	O	F	VF
24. I have experiences where I find myself questioning if aspects of the environment I am in are real.	N	R	O	F	VF
25. When I imagine experiences or events or when I daydream, it seems like what I am imagining is actually occurring.	N	R	O	F	VF
26. I have difficulty describing what I am experiencing on the inside because those experiences are so mixed up or confused.	N	R	O	F	VF
27. There are times when I am overcome by feelings of non-existence or nothingness.	N	R	O	F	VF
28. When I walk, drive, or ride a bicycle, I have the experience of wondering what I was doing during the various points along the way.	N	R	O	F	VF
29. There have been times when I had difficulty deciding whether my environment was real or part of a dream.	N	R	O	F	VF
30. When I perceive my situation as threatening, punishing, or dangerous, I respond by "spacing out" or by mentally "checking out" from the situation.	N	R	O	F	VF
31. There are occasions when I have the experience of watching myself and feeling like I am watching another person.	N	R	O	F	VF
32. When I engage in some type of behaviour or activity, I am mentally disconnected from what I am doing.	N	R	O	F	VF
33. I or others have noticed that at times I stare off into space and seem disconnected from what is going on around me.	N	R	O	F	VF
34. I have had the feeling that my body was an empty shell.	N	R	O	F	VF
35. When alone, I have difficulty focusing my attention in the present	N	R	O	F	VF

APPENDIX M

Code # : _____

Anxiety Sensitivity Index – Revised (ASI-R-36)

Please circle the number that best corresponds to how much you agree with each item. If any of the items concern something that is not part of your experience (for example, “It scares me when I feel shaky” for someone who has never trembled or felt shaky) answer on the basis of how you expect you might feel *if you had* such an experience. Otherwise, answer all items on the basis of your experience. Be careful to circle only one number for each item and please answer all items.

	Very Little	A Little	Moderate	Much	Very Much
1. It is important to me not to appear nervous.	0	1	2	3	4
2. When I cannot keep my mind on a task, I worry that I might be going crazy	0	1	2	3	4
3. It scares me when I feel “shaky” (trembling)	0	1	2	3	4
4. It scares me when I feel faint	0	1	2	3	4
5. It scares me when my heart beats rapidly	0	1	2	3	4
6. It scares me when I am nauseous	0	1	2	3	4
7. When I notice my heart is beating rapidly, I worry that I might have a heart attack	0	1	2	3	4
8. It scares me when I become short of breath	0	1	2	3	4
9. When my stomach is upset, I worry that I might be seriously ill	0	1	2	3	4
10. It scares me when I am unable to keep my mind on a task	0	1	2	3	4
11. When my head is pounding, I worry I could have a stroke	0	1	2	3	4
12. When I tremble in the presence of others, I fear what people might think of me	0	1	2	3	4
13. When I feel like I’m not getting enough air, I get scared that I might suffocate	0	1	2	3	4
14. When I get diarrhoea, I worry that I might have something wrong with me	0	1	2	3	4
15. When I chest feels tight, I get scared that I won’t be able to breathe properly	0	1	2	3	4
16. When my breathing becomes irregular, I fear that something bad will happen	0	1	2	3	4
17. It frightens me when my surroundings seem strange or unreal	0	1	2	3	4
18. Smothering sensations scare me	0	1	2	3	4
19. When I feel pain in my chest, I worry that I’m having a heart attack	0	1	2	3	4
20. I believe it would be awful to vomit in public	0	1	2	3	4
21. It scares me when my body feels strange or different in some way	0	1	2	3	4

	Very Little	A Little	Moderate	Much	Very Much
22. I worry that other people will notice my anxiety	0	1	2	3	4
23. When I feel “spacey” or spaced out, I worry that I may be mentally ill	0	1	2	3	4
24. It scares me when I blush in front of people	0	1	2	3	4
25. When I feel a strong pain in my stomach, I worry that it could be cancer	0	1	2	3	4
26. When I have trouble swallowing, I worry that I could choke	0	1	2	3	4
27. When I notice my heart skipping a beat, I worry that there is something seriously wrong with me	0	1	2	3	4
28. It scares me when I feel tingling or pricking sensations in my hands	0	1	2	3	4
29. When I feel dizzy, I worry there is something wrong with me	0	1	2	3	4
30. When I begin to sweat in social situations, I fear people will think negatively of me	0	1	2	3	4
31. When my thoughts seem to speed up, I worry that I might be going crazy	0	1	2	3	4
32. When my throat feels tight, I worry that I could choke to death	0	1	2	3	4
33. When my face feels numb, I worry that I might be having a stroke	0	1	2	3	4
34. When I have trouble thinking clearly, I worry that there is something wrong with me	0	1	2	3	4
35. I think it would be horrible for me to faint in public	0	1	2	3	4
36. When my mind goes black, I worry that there is something terribly wrong with me	0	1	2	3	4

APPENDIX N

Code # : _____

Fear Questionnaire (FQ)

Choose a number from the scale below to show how much you would avoid each of the situations below because of fear or other unpleasant feelings. Then write the number you chose on the line beside each situation.

0----- 1----- 2----- 3----- 4----- 5----- 6----- 7----- 8

Would not avoid it	Slightly avoid it	Definitely avoid it	Markedly avoid it	Always avoid it
-----------------------	----------------------	------------------------	----------------------	--------------------

1. Main phobia you want treated (describe in your own words):

- | | |
|---|-------|
| 2. Injections or minor surgery | _____ |
| 3. Eating or drinking with other people | _____ |
| 4. Hospitals | _____ |
| 5. Travelling alone by bus or coach | _____ |
| 6. Walking alone in busy streets | _____ |
| 7. Being watched or stared at | _____ |
| 8. Going into crowded shops | _____ |
| 9. Talking to people in authority | _____ |
| 10. Sight of blood | _____ |
| 11. Being criticized | _____ |
| 12. Going alone far from home | _____ |
| 13. Thought of injury or illness | _____ |
| 14. Speaking or acting to an audience | _____ |
| 15. Large open spaces | _____ |
| 16. Going to the dentist | _____ |
| 17. Other situations (describe): _____ | _____ |

AG + BL + SOC = TOTAL

Now choose a number from the scale below to show how much you are troubled by each problem listed and write the number on the line opposite.

0----- 1----- 2----- 3----- 4----- 5----- 6----- 7----- 8

Hardly at all	Slightly troublesome	Definitely troublesome	Markedly troublesome	Very severely troublesome
------------------	-------------------------	---------------------------	-------------------------	------------------------------

- | | |
|--|-------|
| 18. Feeling miserable or depressed | _____ |
| 19. Feeling irritable or angry | _____ |
| 20. Feeling tense or panicky | _____ |
| 21. Upsetting thoughts coming into your mind | _____ |
| 22. Feeling you or your surroundings are strange or unreal | _____ |
| 23. Other feelings (describe): _____ | _____ |

24. How would you rate the present state of your phobic symptoms on the scale below? Circle one number between 0 and 8.

0----- 1----- 2----- 3----- 4----- 5----- 6----- 7----- 8

No phobias Present	Slightly disturbing / not really disabling	Definitely disturbing / disabling	Markedly disturbing / disabling	Very severely disturbing / disabling
-----------------------	--	---	---------------------------------------	--

APPENDIX O

Code # : _____

Social Avoidance and Distress Scale (SADS)

For each of the following items, please indicate directly on this form by circling either T or F whether the statement is true or mostly true (T) as applied to you, or false or mostly false (F) as applied to you. Please try to answer each item.

- T F 1.) I feel relaxed even in unfamiliar social situations.
- T F 2.) I try to avoid situations which force me to be sociable.
- T F 3.) It is easy for me to relax when I am with strangers.
- T F 4.) I have no particular desire to avoid people.
- T F 5.) I often find social occasions upsetting.
- T F 6.) I usually feel calm and comfortable at social occasions.
- T F 7.) I am usually at ease when talking to someone of the opposite sex.
- T F 8.) I try to avoid talking to people unless I know them well.
- T F 9.) If the chance comes to meet new people, I often take it.
- T F 10.) I often feel nervous or tense in casual get-togethers in which both sexes are present.
- T F 11.) I am usually nervous with people unless I know them well.
- T F 12.) I usually feel relaxed when I am with a group of people.
- T F 13.) I often want to get away from people.
- T F 14.) I usually feel uncomfortable when I am in a group of people I don't know.
- T F 15.) I usually feel relaxed when I meet someone for the first time.
- T F 16.) Being introduced to people makes me tense and nervous.
- T F 17.) Even though a room is full of strangers, I may enter it anyway.
- T F 18.) I would avoid walking up and joining a large group of people.
- T F 19.) When my superiors want to talk with me, I talk willingly.
- T F 20.) I often feel on edge when I am with a group of people.
- T F 21.) I tend to withdraw from people.
- T F 22.) I don't mind talking to people at parties or social gatherings.
- T F 23.) I am seldom at ease in a large group of people.
- T F 24.) I often think up excuses in order to avoid social engagements.
- T F 25.) I sometimes take the responsibility for introducing people to each other.
- T F 26.) I try to avoid formal social occasions.
- T F 27.) I usually go to whatever social engagements I have.
- T F 28.) I find it easy to relax with other people.
-

APPENDIX P

Code # : _____

Penn State Worry Questionnaire (PSWQ)

Enter the number that best describes how typical or characteristic each item is of you, putting the number next to the item.

	1	2	3	4	5
	Not at all typical		Somewhat typical		Very typical
1. If I don't have enough time to do everything, I don't worry about it					_____
2. My worries overwhelm me					_____
3. I do not tend to worry about things					_____
4. Many situations make me worry					_____
5. I know I shouldn't worry about things, but I just cannot help it					_____
6. When I am under pressure, I worry a lot					_____
7. I am always worrying about something					_____
8. I find it easy to dismiss worrying thoughts					_____
9. As soon as I finish one task, I start to worry about everything else I have to do					_____
10. I never worry about anything					_____
11. When there is nothing more I can do about a concern, I don't worry about it anymore					_____
12. I've been a worrier all my life					_____
13. I notice that I have been worrying about things					_____
14. Once I start worrying, I can't stop					_____
15. I worry all the time					_____
16. I worry about projects until they are done					_____

Traumatic Events Questionnaire

NO

YES →

3. Have you been a victim of a violent crime such as a rape, robbery, or assault?

- How many times? Once Twice Three +
- How old were you at the time(s)? 1st _____ 2nd _____ 3rd _____
- Were you injured at all?
Not at all 1 2 3 4 5 Severely 6 7
- Did you feel your life was threatened?
Not at all 1 2 3 4 5 Severely 6 7
- How traumatic **was** this event for you at the time?
Not at all 1 2 3 4 5 Severely 6 7
- How traumatic **is** this for you now?
Not at all 1 2 3 4 5 Severely 6 7
- What was the crime? _____

NO

YES →

4. As a child, were you the victim of either physical or sexual abuse?

- How old were you when it began? _____
- How old were you when it ended? _____
- Were you injured?
Not at all 1 2 3 4 5 Severely 6 7
- Did you feel your life was threatened?
Not at all 1 2 3 4 5 Severely 6 7
- How traumatic **was** this event for you at the time?
Not at all 1 2 3 4 5 Severely 6 7
- How traumatic **is** this for you now?
Not at all 1 2 3 4 5 Severely 6 7
- Was the assailant male or female? Male Female
- Check (Y) all categories that describe the experience.....

- Physical Abuse
- Sexual penetration of the mouth, anus, or vagina
- No sexual penetration, but the assailant attempted to force you to complete such an act
- Some other form of sexual contact e.g., touched your sexual organs, or forced to touch assailants' sexual organs
- No sexual contact occurred, however, the assailant attempted to touch your sexual organs, or make you touch his / her sexual organs

YES

6. **As an adult**, have you ever been in a relationship in which you were abuse physically or otherwise?

- a. How old were you when it began? _____
- b. How old were you when it ended? _____
- c. Were you injured?
Not at all 1 2 3 4 5 6 7 Severely
- d. Did you feel your life was threatened?
Not at all 1 2 3 4 5 6 7 Severely
- e. How traumatic **was** this event for you at the time?
Not at all 1 2 3 4 5 6 7 Severely
- f. How traumatic **is** this for you now?
Not at all 1 2 3 4 5 6 7 Severely

YES

8. Have you been in serious danger of losing your life, or of being seriously injured?

- a. How many times? Once Twice Three +
- b. How old were you at the time(s)? 1st _____ 2nd _____ 3rd _____
- c. Were you injured?
- | | | | | | | | | | | | | | |
|--|------------|---|--|---|---|--|---|----------|---|--|---|--|--|
| | Not at all | | | | | | | Severely | | | | | |
| | 1 | 2 | | 3 | 4 | | 5 | | 6 | | 7 | | |
- d. Did you feel your life was threatened?
- | | | | | | | | | | | | | | |
|--|------------|---|--|---|---|--|---|----------|---|--|---|--|--|
| | Not at all | | | | | | | Severely | | | | | |
| | 1 | 2 | | 3 | 4 | | 5 | | 6 | | 7 | | |
- e. How traumatic **was** this event for you at the time?
- | | | | | | | | | | | | | | |
|--|------------|---|--|---|---|--|---|----------|---|--|---|--|--|
| | Not at all | | | | | | | Severely | | | | | |
| | 1 | 2 | | 3 | 4 | | 5 | | 6 | | 7 | | |
- f. How traumatic **is** this for you now?
- | | | | | | | | | | | | | | |
|--|------------|---|--|---|---|--|---|----------|---|--|---|--|--|
| | Not at all | | | | | | | Severely | | | | | |
| | 1 | 2 | | 3 | 4 | | 5 | | 6 | | 7 | | |
- g. What was the event? _____

YES

10. Have you ever had any other very traumatic event like these?

- a. How many times? Once Twice Three +
- b. How old were you at the time(s)? 1st _____ 2nd _____ 3rd _____
- c. Were you injured at all?
- Not at all 1 2 3 4 5 Severely
6 7
- d. Did you feel your life was threatened?
- Not at all 1 2 3 4 5 Severely
6 7
- e. How traumatic was this event for you at the time?
- Not at all 1 2 3 4 5 Severely
6 7
- f. How traumatic is this for you now?
- Not at all 1 2 3 4 5 Severely
6 7
- g. What was the event? _____

NO

YES →

11. Have you had any experiences like these that you can't tell about? (note: you don't have to describe the event)

- a. How many times? Once Twice Three +
- b. How old were you at the time(s)? 1st _____ 2nd _____ 3rd _____
- c. Were you injured at all?
Not at all 1 2 3 4 5 6 7 Severely
- d. Did you feel your life was threatened?
Not at all 1 2 3 4 5 6 7 Severely
- e. How traumatic **was** this event for you at the time?
Not at all 1 2 3 4 5 6 7 Severely
- f. How traumatic **is** this for you now?
Not at all 1 2 3 4 5 6 7 Severely

If you answered 'Yes' to one or more of the questions above, which was the MOST traumatic thing to have happened to you? (Fill in the number of the question, e.g., # 2 for natural disaster) _____

Did you answer 'Yes' to more than one question above while thinking about the same event? **YES** **NO**
If yes, which items refer to the same event? _____

If you answered 'No' to all questions, describe briefly the most traumatic thing to have happened to you:

- g. How many times? Once Twice Three +
- h. How old were you at the time(s)? 1st _____ 2nd _____ 3rd _____
- i. Were you injured?
Not at all 1 2 3 4 5 6 7 Severely
- j. Did you feel your life was threatened?
Not at all 1 2 3 4 5 6 7 Severely
- k. How traumatic was this event for you at the time?
Not at all 1 2 3 4 5 6 7 Severely
- l. How traumatic is this for you now?
Not at all 1 2 3 4 5 6 7 Severely

APPENDIX R

Code # : _____

PTSD Checklist – Civilian Version (PCL-C)

Instructions: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem *in the past month*.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?	1	2	3	4	5
2. Repeated disturbing dreams of a stressful experience from the past?	1	2	3	4	5
3. Suddenly acting or feeling as if a stressful experience from the past were happening again (as if you were reliving it)?	1	2	3	4	5
4. Feeling very upset when something reminded you of a stressful experience from the past?	1	2	3	4	5
5. Having physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience from the past?	1	2	3	4	5
6. Avoiding thinking or talking about a stressful experience from the past or avoiding having feelings related to it?	1	2	3	4	5
7. Avoiding activities or situations because they remind you of a stressful experience from the past?	1	2	3	4	5
8. Trouble remembering important parts of a stressful experience from the past?	1	2	3	4	5
9. Loss of interest in activities that you used to enjoy?	1	2	3	4	5
10. Feeling distant or cut off from other people?	1	2	3	4	5
11. Feeling emotionally numb or being unable to have loving feelings for those close to you?	1	2	3	4	5
12. Feeling as if your future somehow will be cut short?	1	2	3	4	5
13. Trouble falling or staying asleep?	1	2	3	4	5
14. Feeling irritable or having angry outbursts?	1	2	3	4	5
15. Having difficulty concentrating?	1	2	3	4	5
16. Being “super alert” or watchful or on guard?	1	2	3	4	5
17. Feeling jumpy or easily startled?	1	2	3	4	5

APPENDIX S

Distributions of Scores on Measures of Dissociation and Anxiety

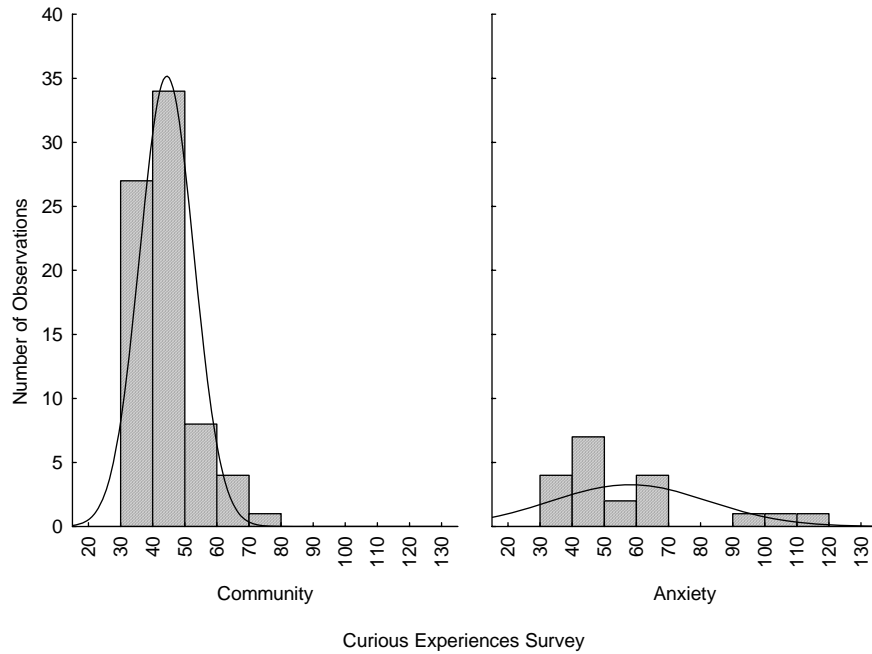


Figure S1. Distribution of scores on the Curious Experiences Survey

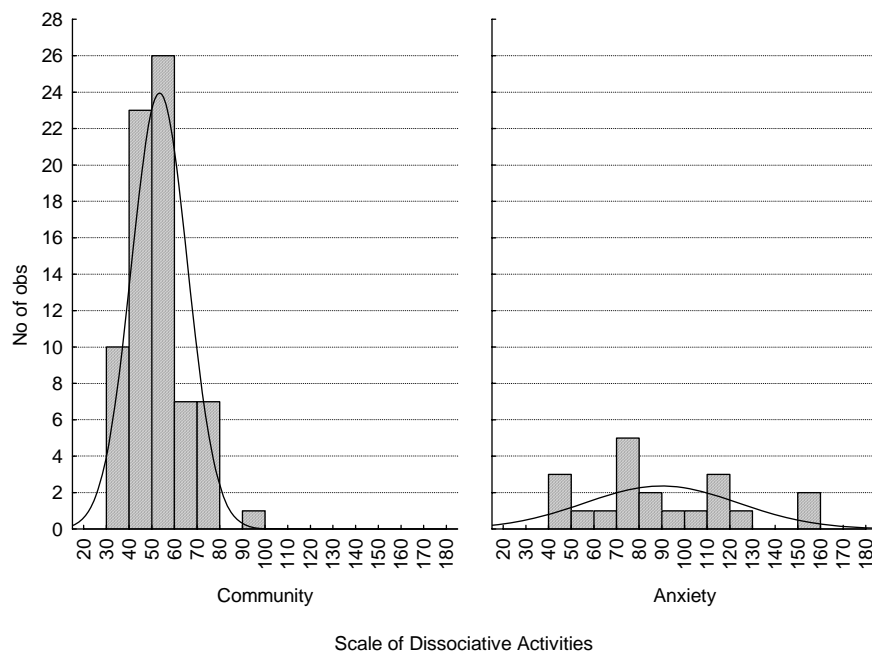


Figure S2. Distribution of scores on the Scale of Dissociative Activities

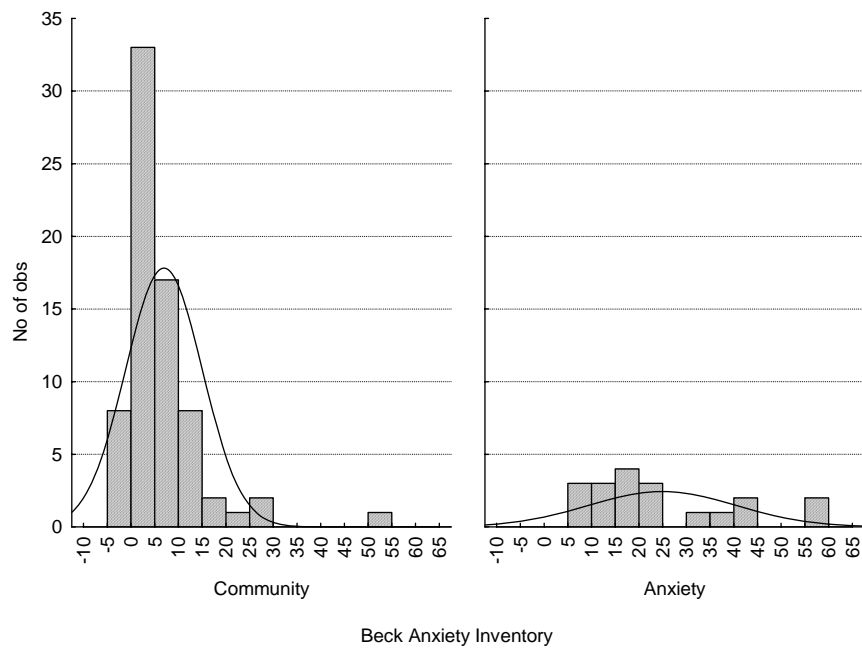


Figure S3. Distribution of scores on the Beck Anxiety Inventory

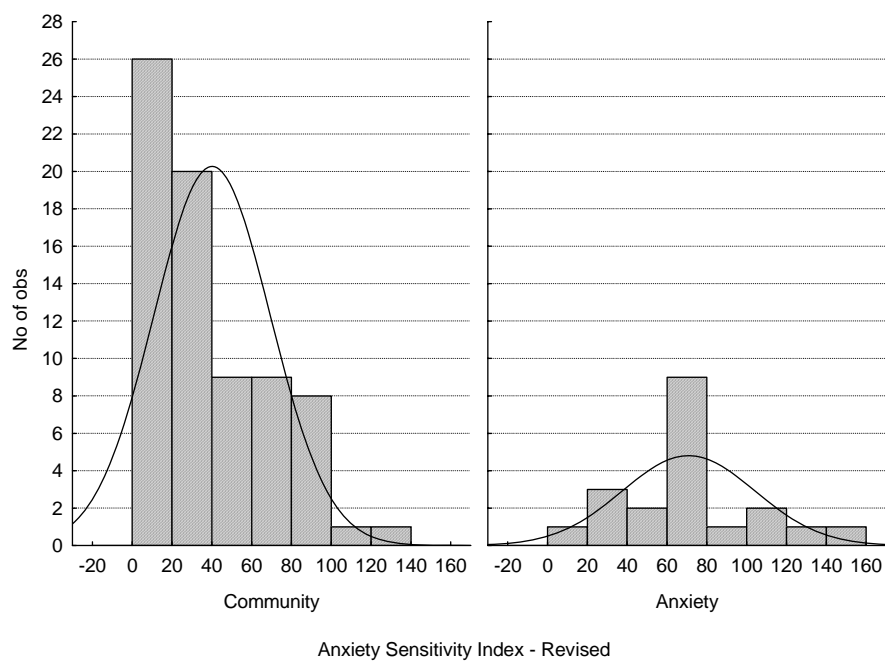


Figure S4. Distribution of scores on the Anxiety Sensitivity Index - Revised

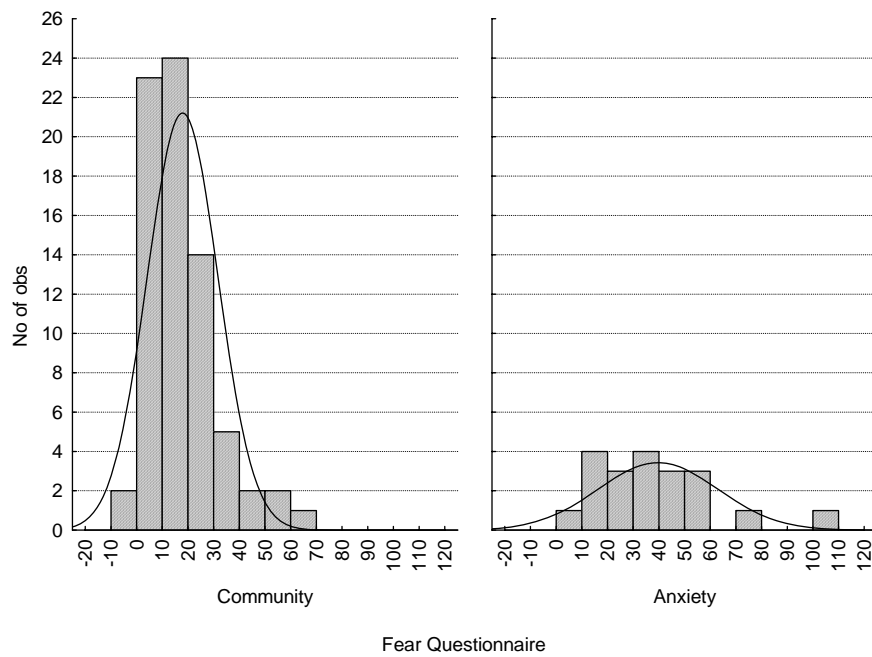


Figure S5. Distribution of scores on the Fear Questionnaire

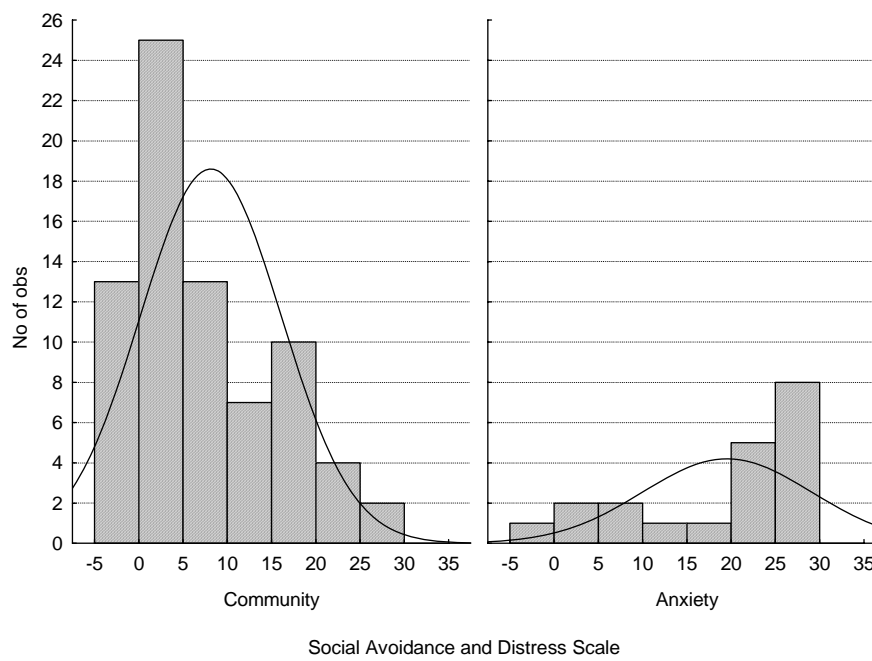


Figure S6. Distribution of scores on the Social Avoidance and Distress Scale

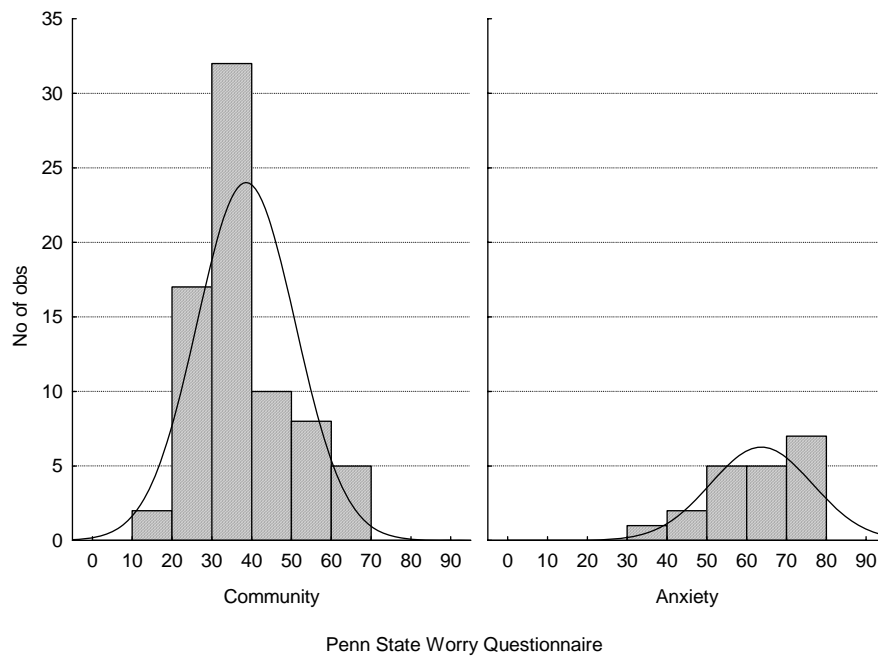


Figure S7. Distribution of scores on the Penn State Worry Questionnaire

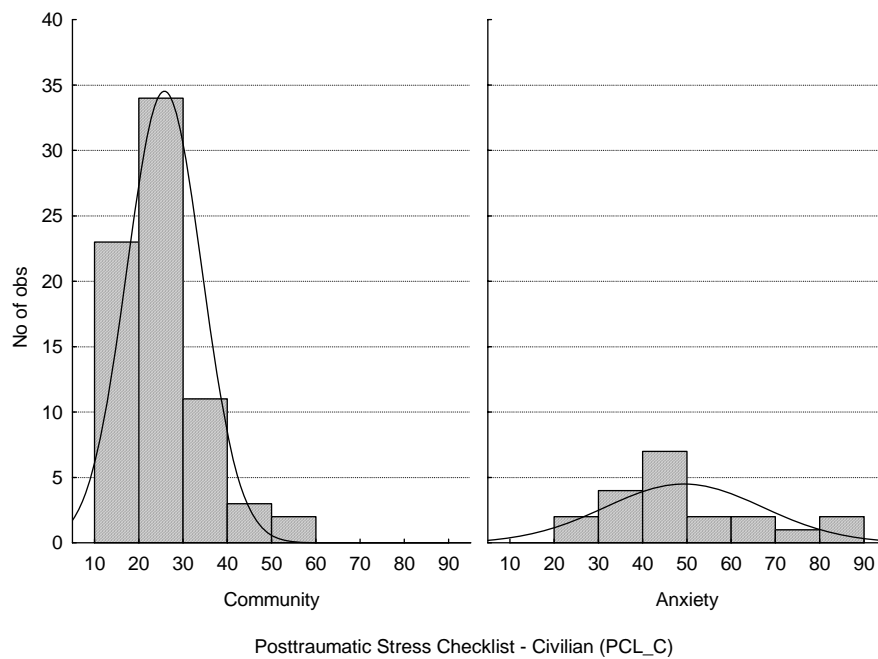


Figure S8. Distribution of scores on the PTSD Checklist - Civilian

APPENDIX T

Distributions of Scores on Depersonalisation Index

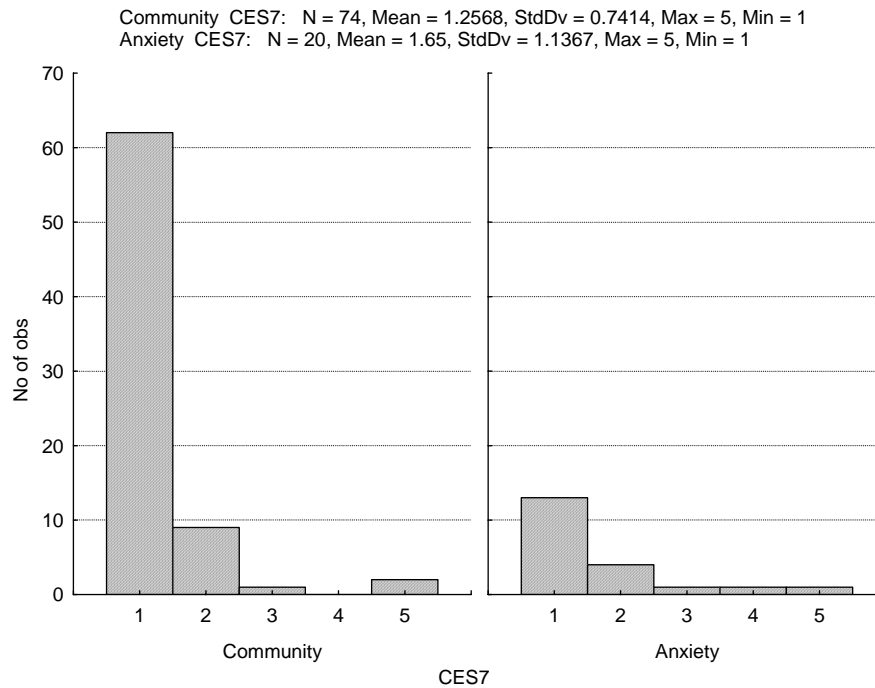


Figure T1. Distribution of scores between-groups on CES item seven

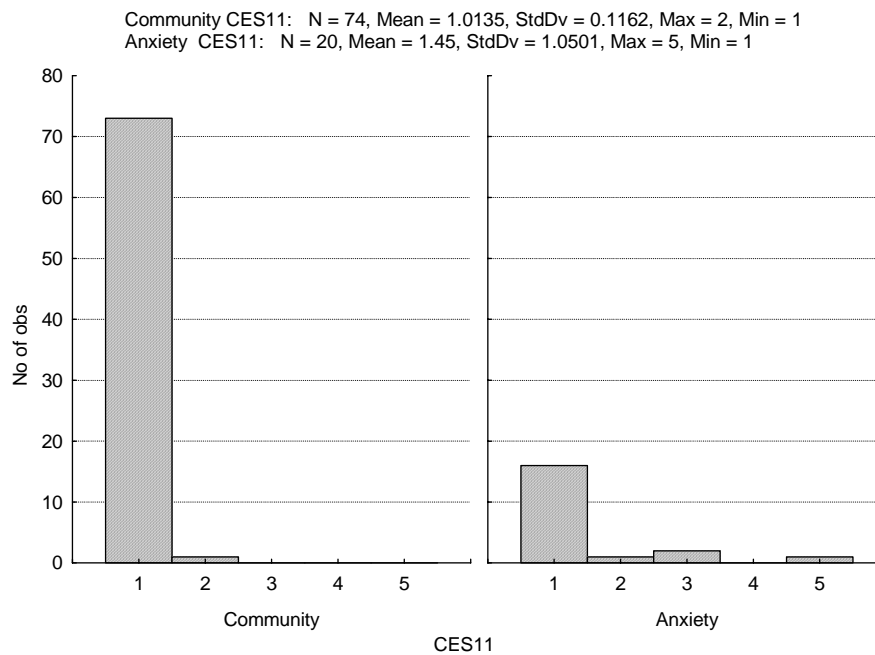


Figure T2 Distribution of scores between-groups on CES item 11

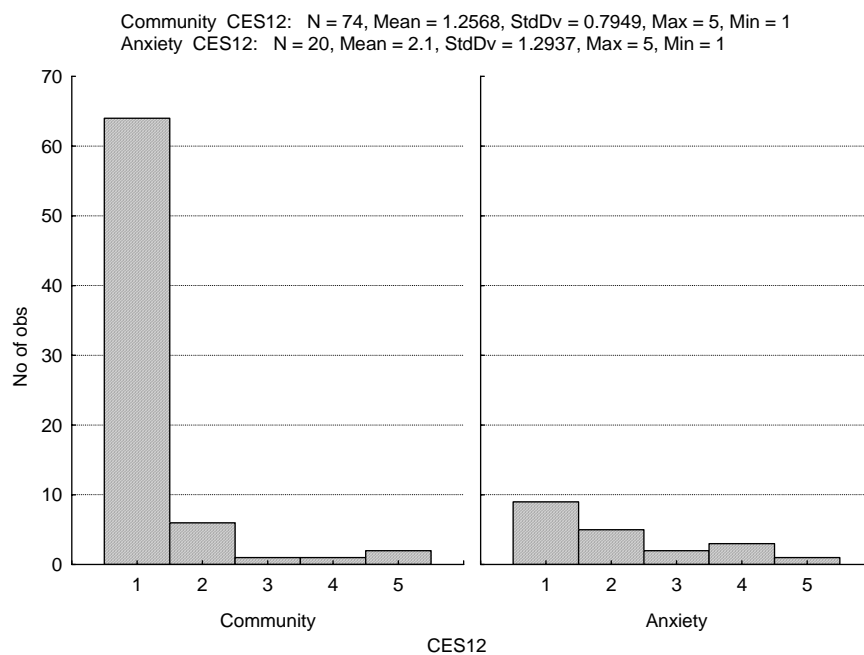


Figure T3. Distribution of scores between-groups on CES item 12

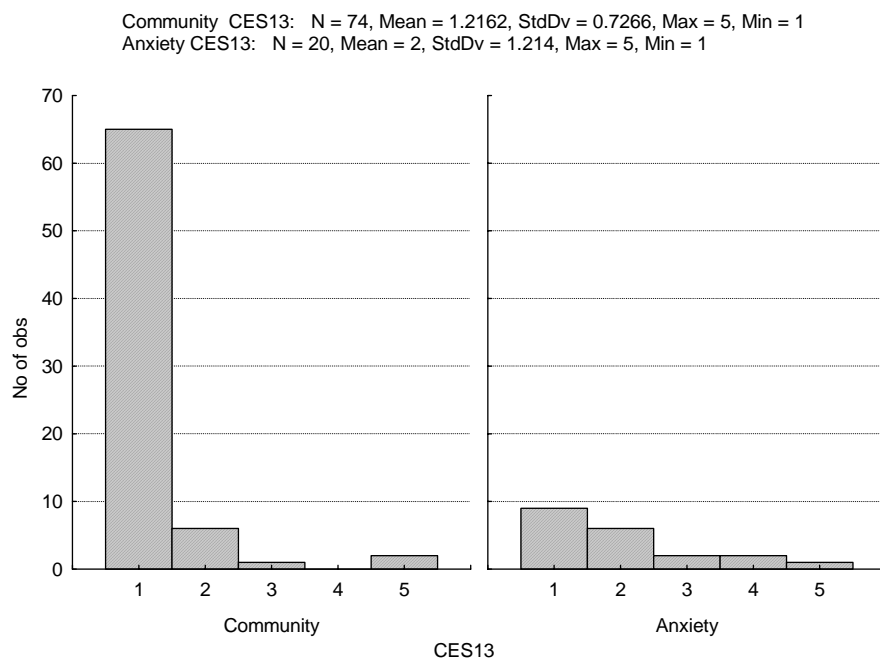


Figure T4. Distribution of scores between-groups on CES item 13

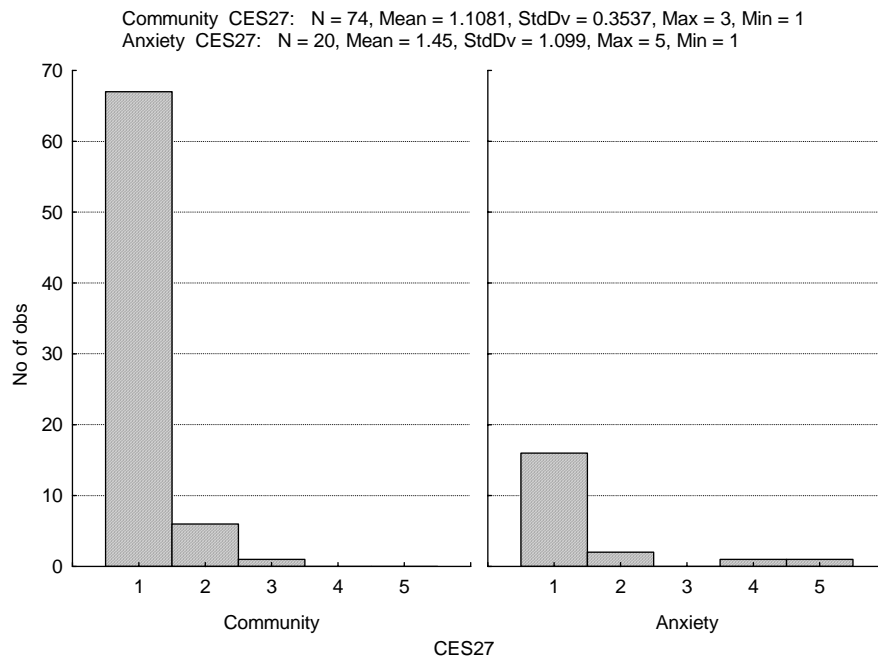


Figure T5. Distribution of scores between-groups on CES item 27

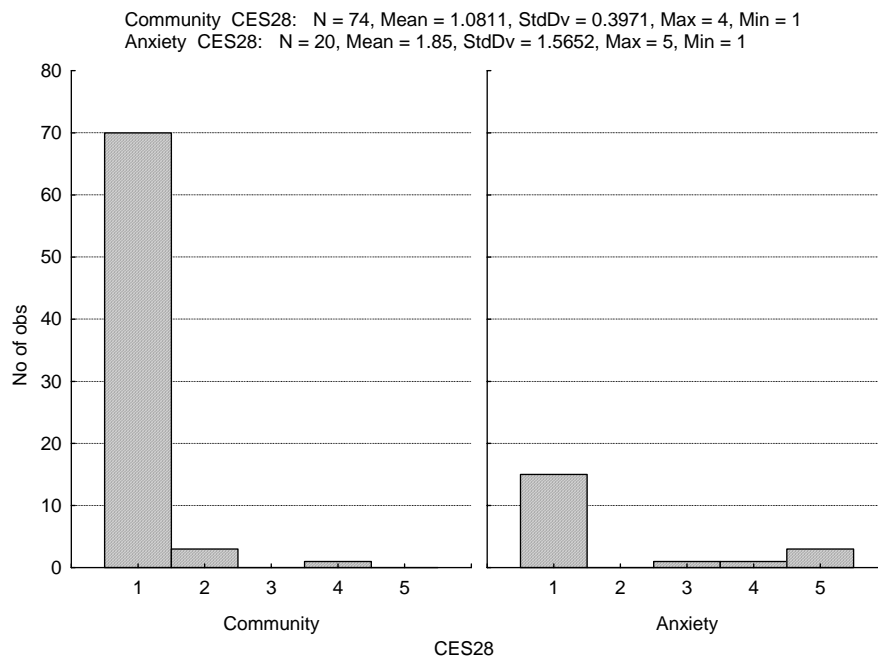


Figure T6. Distribution of scores between-groups on CES item 28

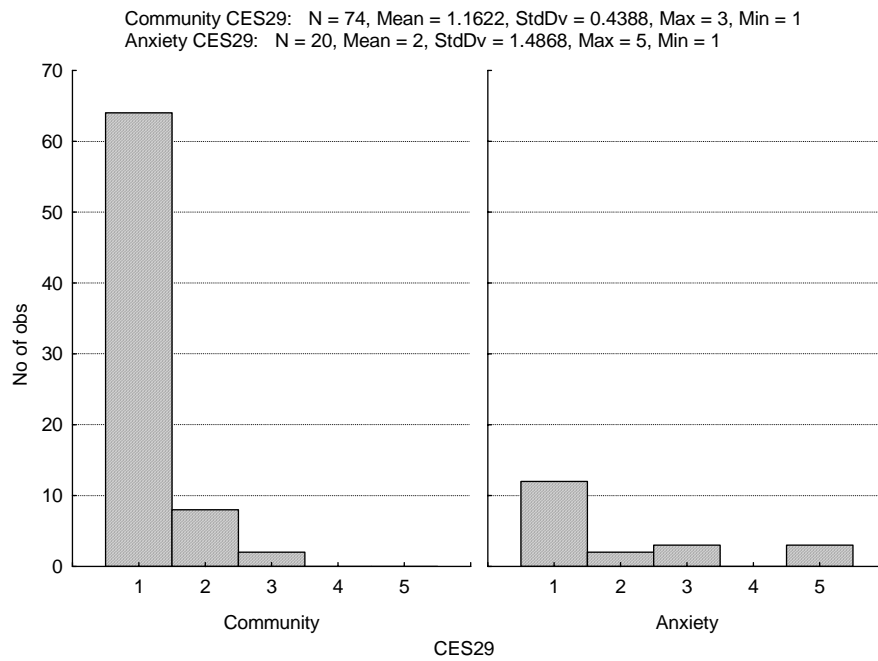


Figure T7. Distribution of scores between-groups on CES item 29

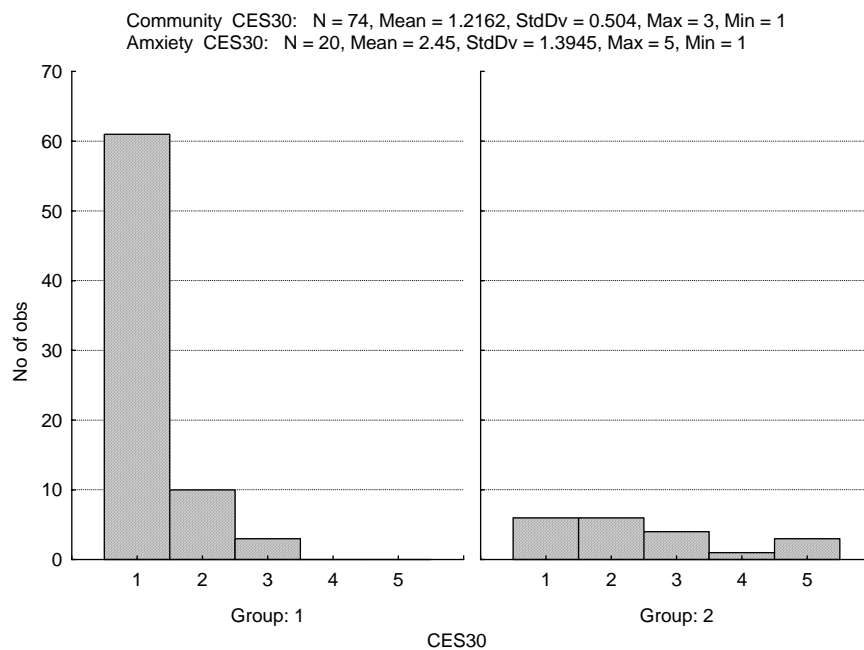


Figure T8. Distribution of scores between-groups on CES item 30

APPENDIX U

Distributions of Scores on Absorption Index

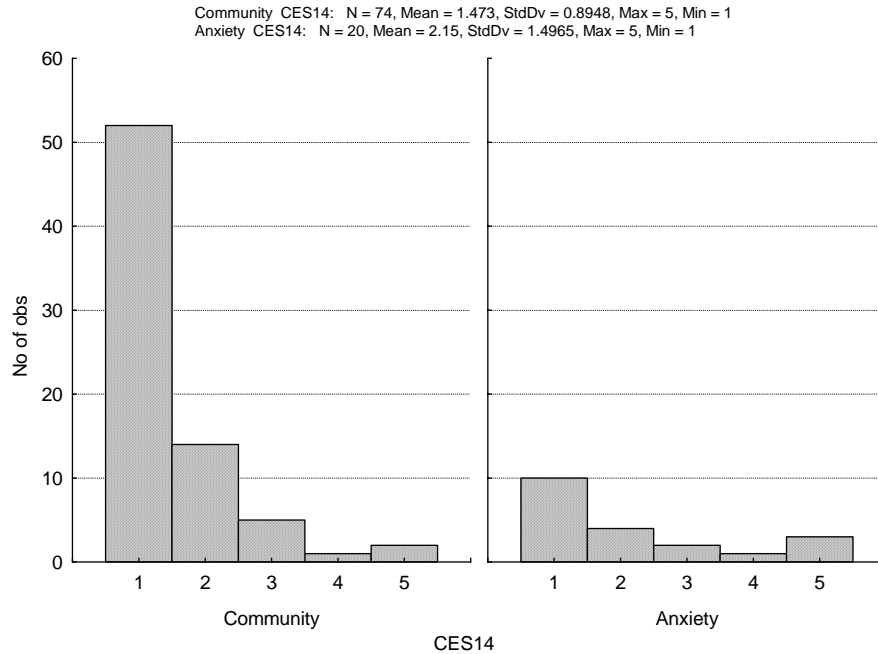


Figure U1. Distribution of scores between-groups on CES item 14

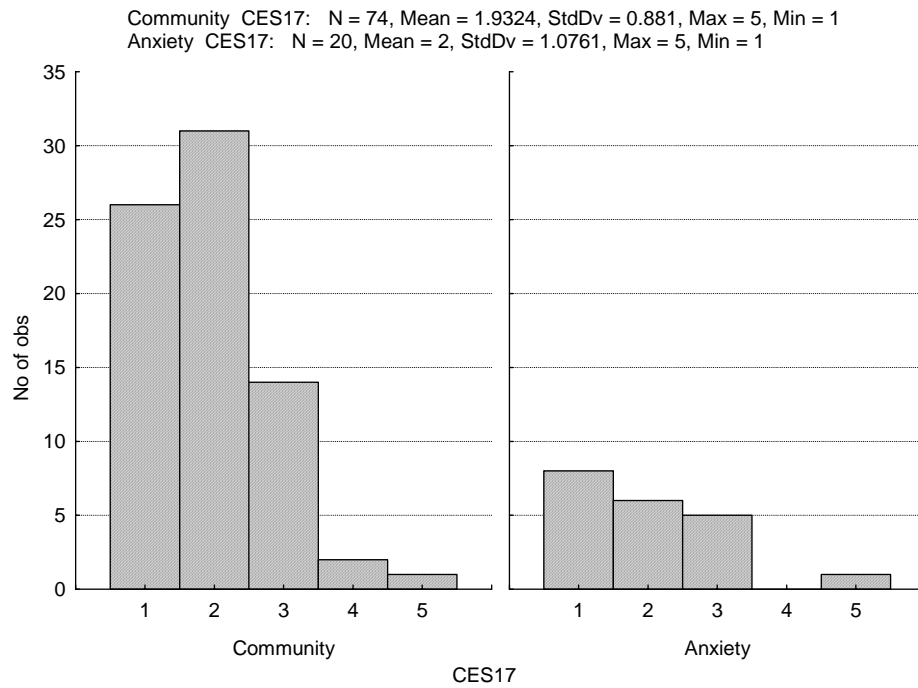


Figure U2. Distribution of scores between-groups on CES item 17

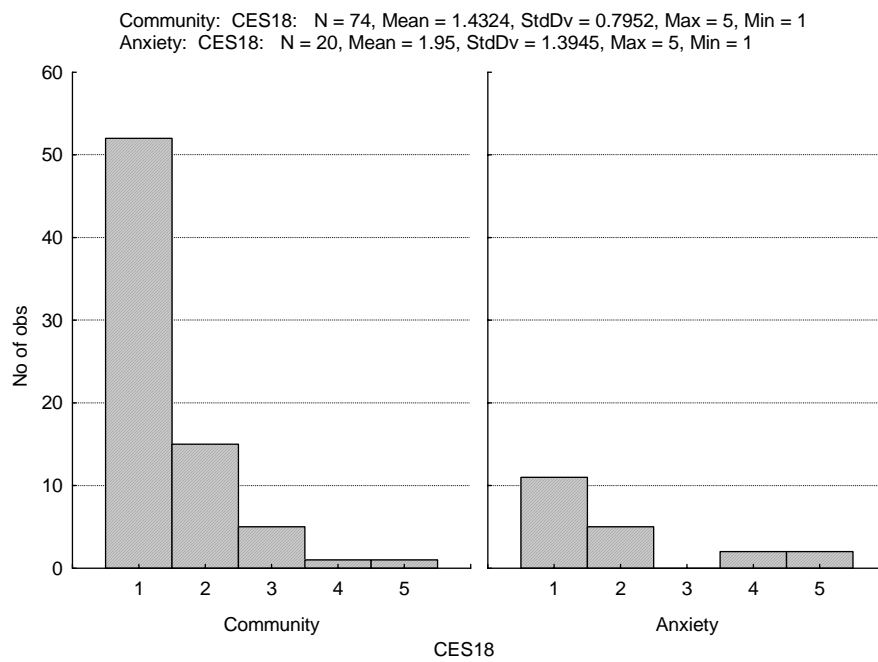


Figure U3. Distribution of scores between-groups on CES item 18

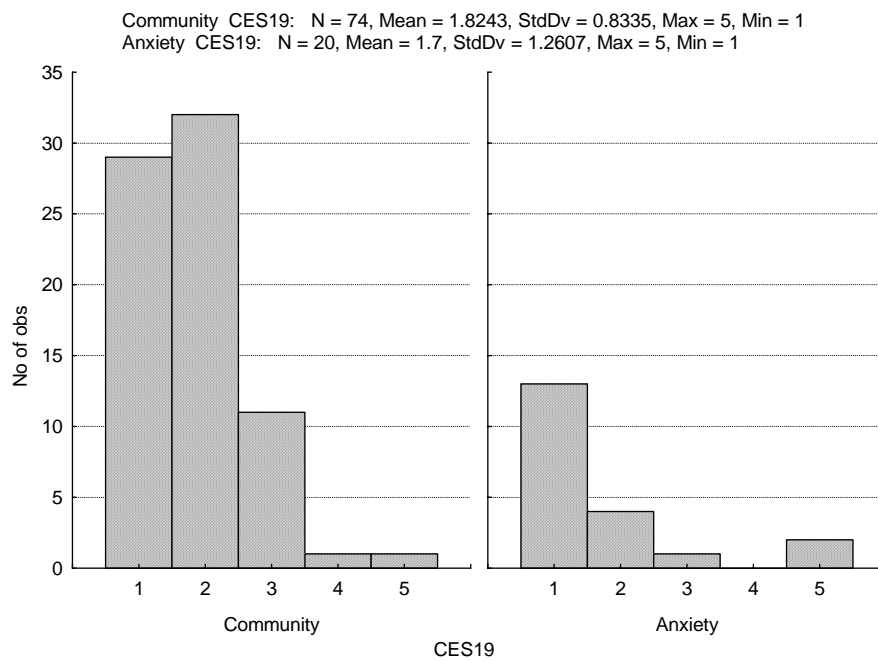


Figure U4. Distribution of scores between-groups on CES item 19

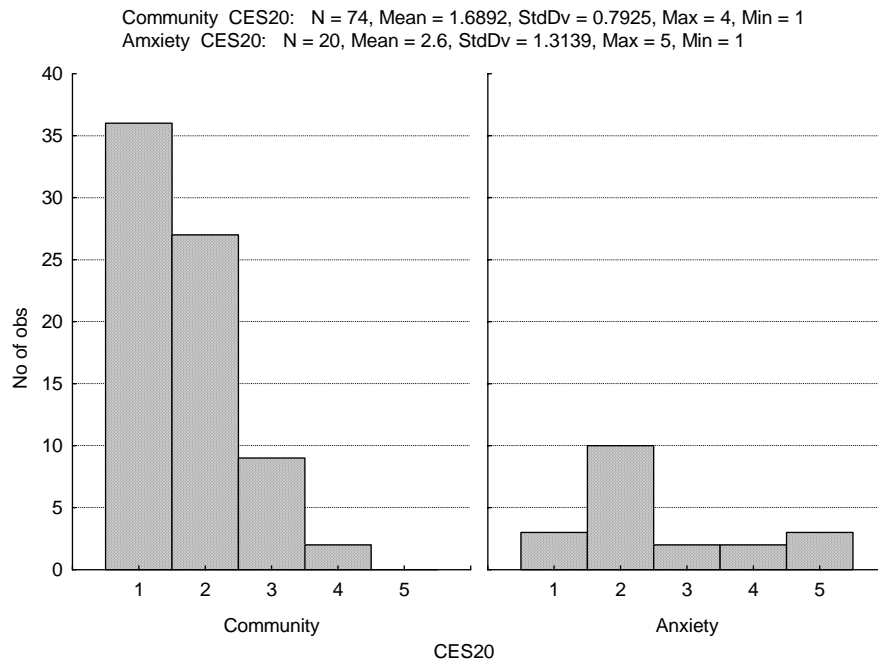


Figure U5. Distribution of scores between-groups on CES item 20

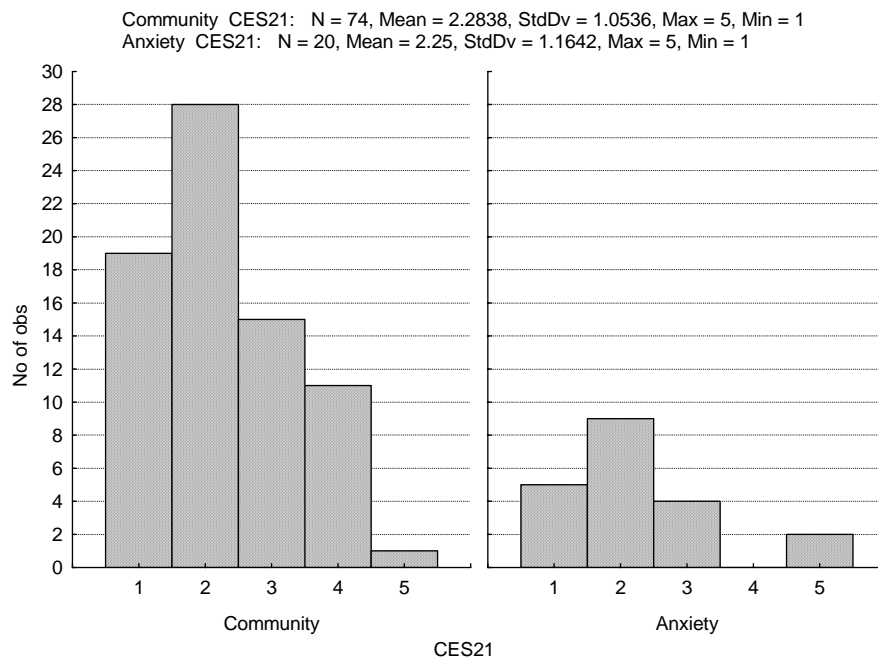


Figure U6. Distribution of scores between-groups on CES item 21

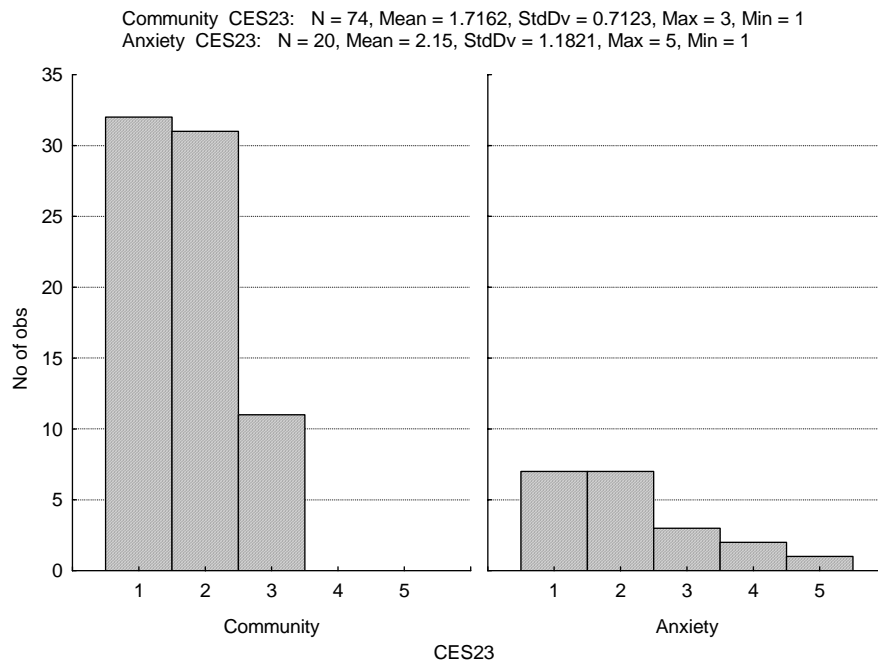


Figure U7. Distribution of scores between-groups on CES item 23

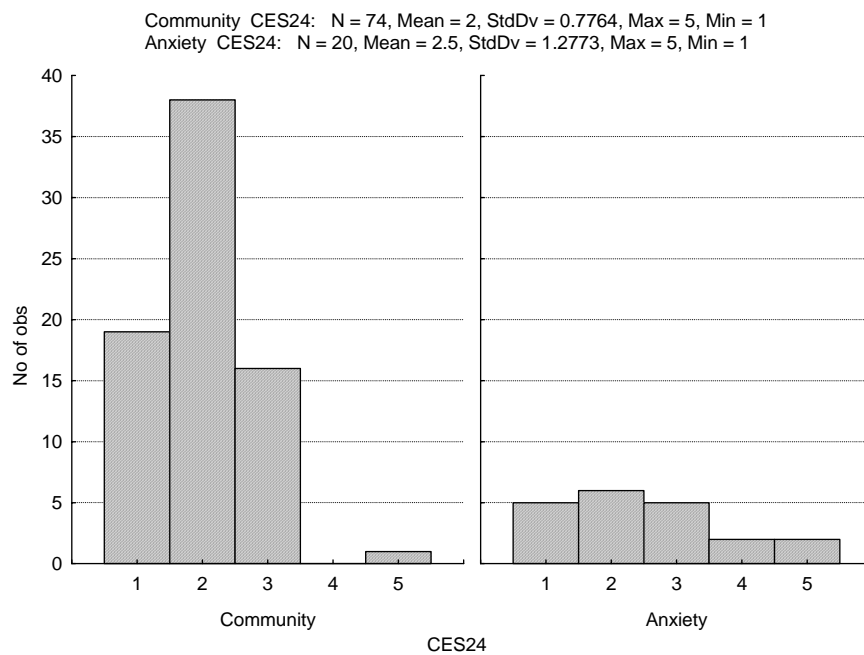


Figure U8. Distribution of scores between-groups on CES item 24s

APPENDIX V

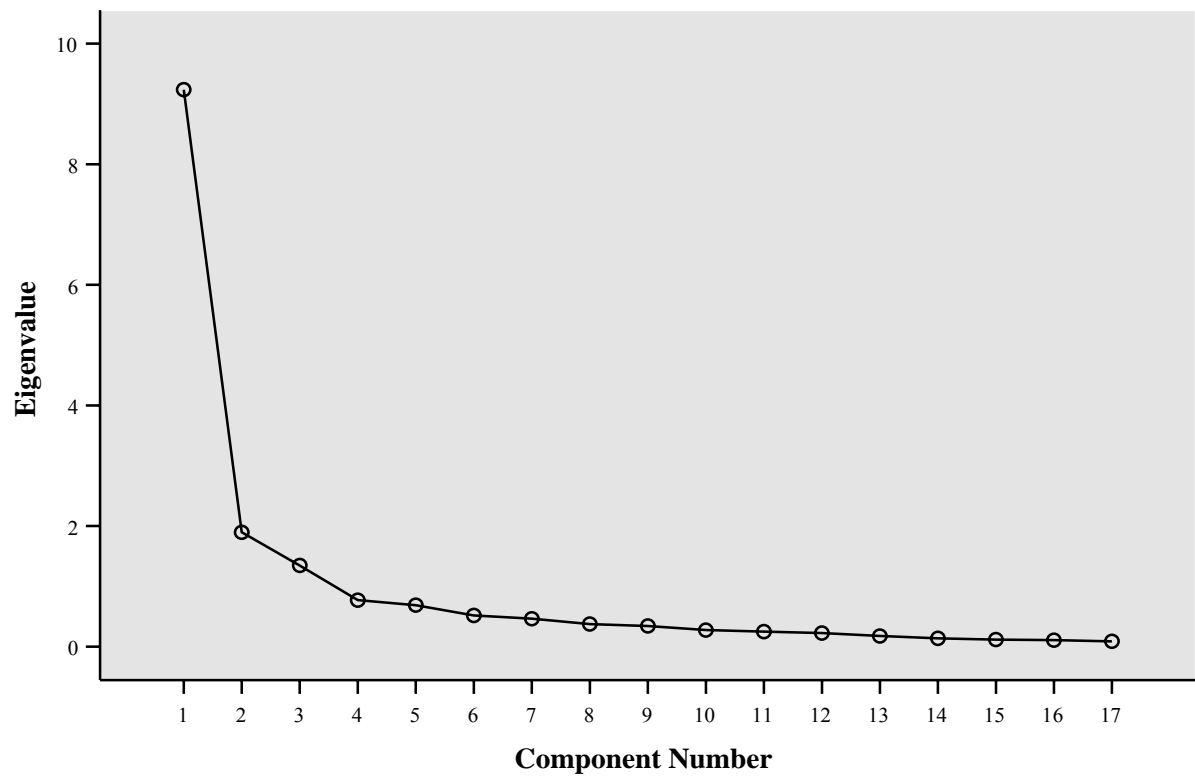


Figure VI. Scree Plot derived from Principle Components Analysis.

APPENDIX W

Ref: HEC/2004/93

21 October 2004

Jacqueline Harris
Department of Psychology
UNIVERSITY OF CANTERBURY

Dear Jacqueline

The Human Ethics Committee advises that your research proposal **“An Investigation into the Relationship between Anxiety and Normal and Pathological Dissociative Experiences”** has been considered and approved.

Yours sincerely

Tracey Gaskin
Secretary

APPENDIX X

19 October 2006

Jacqueline Harris
10A Grange Street
Opawa
Christchurch

Dear Ms Harris

CTR/04/03/033

An Investigation into the Relationship between Anxiety and Normal and Pathological Dissociative Experiences

Thank you for your letter dated 22 June 2006 regarding the above study and apologies for the considerable delay in responding to it. The Chairperson of the Upper South B regional Ethics Committee has given ethical approval under delegated authority for the following.

Approved amendment:

Amendments to recruitment strategy by a) having clinicians approach clients who are in the early stages of treatment at ADU and b) completing a mail out to clients wait-listed for treatment.

Approved documents:

Information Sheet and Consent Form version ADU – Postal
Information Sheet and Consent Form version ADU

In addition, the change of supervisor is noted. Ethical approval is confirmed until 30 May 2007.

Please contact me if you should require anything further.

Yours sincerely

Katherine Bell
Upper South B Ethics Committee Administrator